Armstrong's
HANDBOOK FOR LINOLEUM MECHANICS

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Armstrong's Handbook
for
Linoleum Mechanics

ARMSTRONG CORK COMPANY
FLOOR DIVISION LANCASTER, PA.

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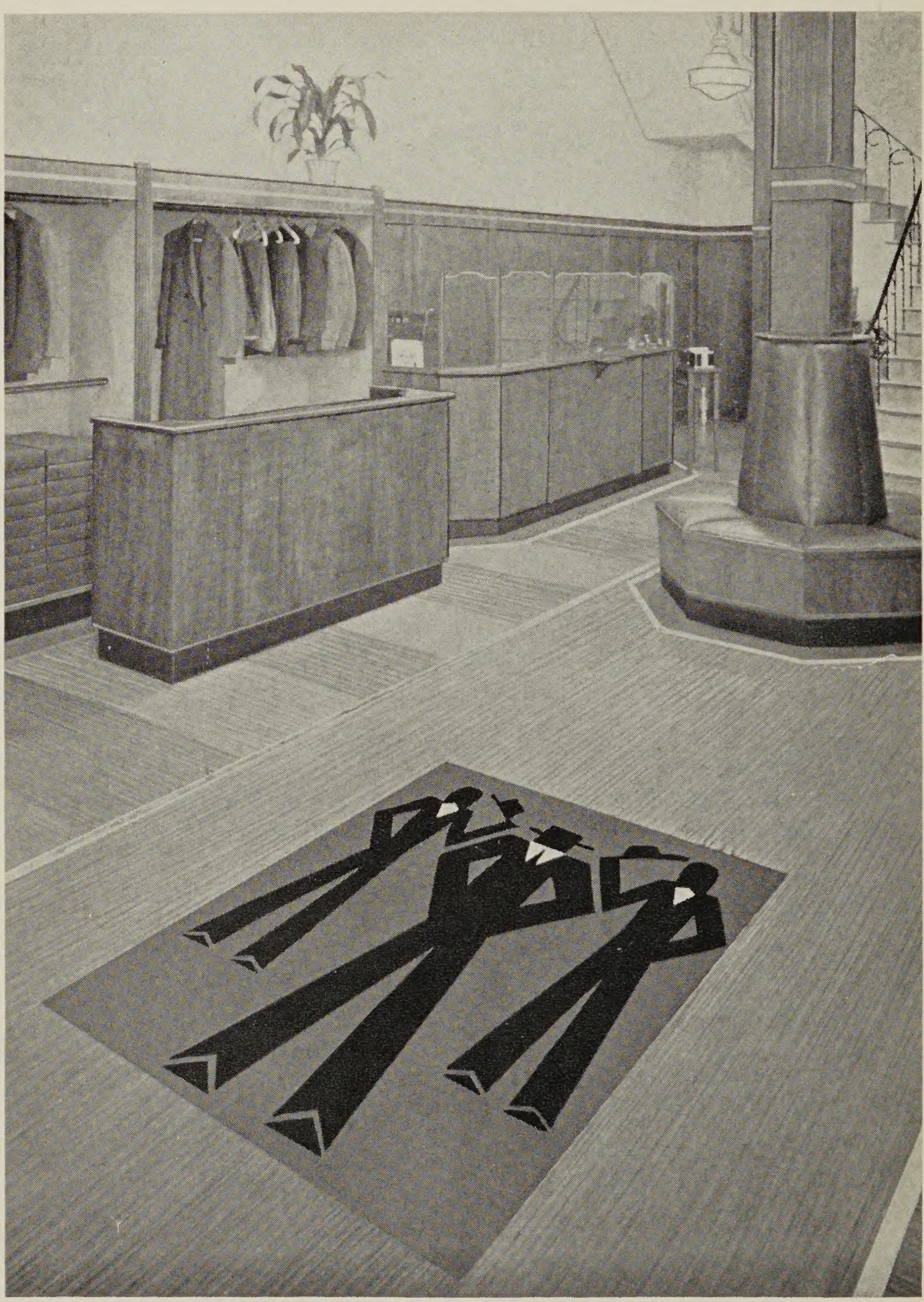

A dramatic demonstration of the effectiveness of Custom-Craft designs. Customers immediately associate this floor with the character of the store where it is used.

FOREWORD

This book has been prepared to help linoleum mechanics master the newest methods of linoleum installation. It is not only a basis for initial instruction, but also a constant source of reference. Therefore, it is suggested that mechanics carry it with them at all times in order that it may be consulted when new or unfamiliar problems arise.

The methods outlined here are based upon the latest practices developed by the Armstrong Laying School and tested on scores of typical jobs. They include all the ordinary types of linoleum installations, plus custom floor effects and many special uses and applications of linoleum.

To get the most out of this book, read it through from start to finish. We suggest this because certain operations described in detail in one chapter are often referred to in later chapters.

While printed instructions can never take the place of personal instructions, we have attempted to make this book understandable and useful to the beginner as well as to the experienced mechanic.

Generous use of photographs and drawings has been made to supplement the text. Readers who find any points not clear, or who have suggestions that would improve the next edition of this book, are invited to write their questions or comments to the Armstrong Laying School, Lancaster, Pennsylvania.

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SECTION I

CHAPTER ONE

Facts about Linoleum and Other Resilient Floorings

Linoleum can always be distinguished by the fact that it consists of a linoleum mix on a *burlap* backing. The linoleum mix consists of drying oils, powdered cork, wood flour, gum, and color pigments.

Types of Linoleum

There are eight types of linoleum: (1) Battleship, (2) Plain, (3) Jaspé, (4) Marbelle, (5) Monobelle, (6) Embossed Inlaid, (7) Straight Line Inlaid, and (8) Printed.

Battleship is 6 mm., 3/16″, or 1/8″ gauge linoleum in solid colors without pattern.

Plain Linoleum is the same quality as Battleship, but refers to the lighter and more decorative colors. It is supplied in 1/8″, Medium (3/32″), and Standard (5/64″) gauges.

Jaspé presents a multi-tone striated appearance. It is made in 3/16″, 1/8″, Medium, and Standard gauges.

Marbelle is linoleum in all-over marble effects. It is used in residential and commercial applications. In addition to ordinary installations, Marbelle is widely used as a basic material for the creation of custom effects. It also enjoys wide usage as a border material for pattern goods floors. It is supplied in 3/16″, Heavy (1/8″), Medium (3/32″), and Standard (5/64″) gauges.

Monobelle is a new type of linoleum, somewhat similar to Marbelle except that the marbleized effect is produced by combining softly blended tones of the same color rather than different colors. It is available in Heavy (1/8″), Medium (3/32″), and Standard (5/64″) gauges.

Embossed Inlaid is a patterned linoleum made with portions of the design slightly depressed, producing a floor in which the blocks or other design elements actually stand out in relief. The embossing is "streamlined," not only to prevent dirt from collecting in the depressed sections, but also to make the design more attractive. In some patterns, the interliners are embossed to give the effect of hand-laid tiles. In others, the embossing accents other parts of the design. Embossing also tends to conceal irregularities in the subfloor and to break up highlights that would give the floor a glassy appearance. Embossed Inlaid is made in Heavy, Medium, and Standard gauges.

STRAIGHT LINE INLAID is a patterned linoleum made by arranging plain or marbleized units of design on a burlap backing. The name "straight line" is derived from the straight, clean-cut lines between the blocks, a distinguishing feature of this type of linoleum. It is made in Heavy, Medium, and Standard.

PRINTED LINOLEUM is of the same basic construction as Plain linoleum, except that a design is printed on the surface with a wear-resisting paint. In all other types of linoleum, the colorings run through the full thickness of the linoleum mix.

Gauges of Linoleum

American manufacturers of linoleum have standardized on five linoleum gauges as follows:

FIG. 1—*The Linoleum Plant of the Armstrong Cork Company in Lancaster, Pa., home of Armstrong floor products and Linowall. Materials and workmanship meet the highest standards of quality. Products are rigidly inspected before shipping.*

6 mm., 3/16", Heavy (1/8), Medium (3/32"), and Standard (5/64"). All types of linoleum bearing the same gauge designation are of identical thickness.

Widths of Linoleum

All linoleum except Printed linoleum is made 2 yds. wide only. Printed linoleum is available in 2-yd. and 4-yd. widths.

Inlaid Linoflor

Armstrong's Inlaid Linoflor is the lowest-priced of the various inlaid floorings. It consists of a linoleum type of mix calendered to strong felt backing instead of burlap. The designs are inlaid and run through the full thickness of the mix. Rolls are 6' wide.

Inlaid Linoflor is made with a special Safety-Back, which permits removal after the Linoflor has been pasted to wood.

Marbelle Linoflor

Armstrong's Marbelle Linoflor, with Safety-Back, is similar in composition to Inlaid Linoflor; but it is supplied in an all-over marble effect rather than in patterns. Rolls are 6' wide.

Printed Linoflor

Armstrong's Printed Linoflor is a new type of flooring that combines many of the advantages of Printed linoleum and Inlaid Linoflor. The material consists of a linoleum type of mix firmly bonded to a backing of heavy-duty saturated felt. The surface of the mix is printed with designs in what is believed to be the heaviest paint film of any floor covering.

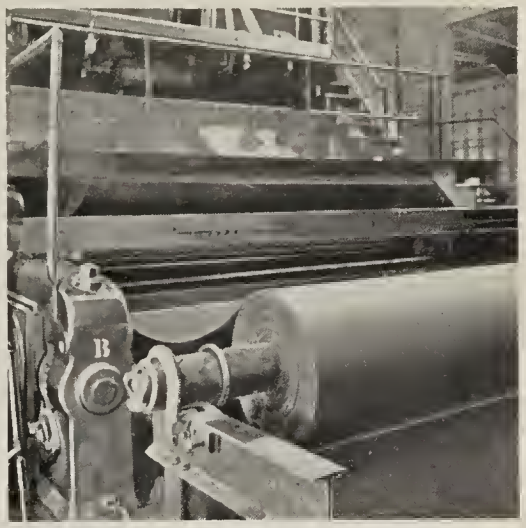


FIG. 2—*The calendering operation in making linoleum, one of the many processes under rigid, exacting control.*

Printed Linoflor also is made with the special Safety-Back, which permits it to be removed after it has been pasted to wood. Rolls are 6' and 12' wide.

Quaker Floor Covering

Armstrong's Quaker Floor Covering is the top-quality line in printed felt-base materials because it provides the thickest wearing surface available in this type of floor covering. Furthermore, it is the only printed felt-base product having the convenient Safety-Back feature, which permits removal of the goods when installed by pasting.

Rolls in 6′, 9′, and 12′ widths make it possible to install Quaker Floor Covering in practically any size of room without seams.

Quaker Passage Covering is supplied in rolls 3′ wide.

Standard Floor Covering

Armstrong's Standard Floor Covering is a low-cost but attractively printed felt-base material in 6′, 9′, and 12′ rolls. Lighter in gauge than Quaker, it provides a serviceable, practical floor.

Standard Passage Covering is supplied in 2′ widths.

Mastic Armoflor

Armstrong's Mastic Armoflor consists of a calendered mastic mix keyed to a backing of tough asphalt-saturated felt. It can be installed on any type of subfloor in direct contact with the ground, but not below grade. It meets the need for an inexpensive flooring in areas where low initial cost and reasonable durability are more important than variety of coloring. Mastic Armoflor is available in black, red, green, and brown. Rolls are 3′ wide. Specifications will be supplied.

Cork Carpet

Armstrong's Cork Carpet is similar to linoleum but is made with a mix containing a high percentage of cork. It is furnished in brown and green, ¼″ gauge, in rolls 6′ wide. The directions for installing Plain linoleum apply also to cork carpet.

Linowall

Armstrong's Linowall consists of an inlaid linoleum-like composition keyed to a flexible fabric backing. Used as a wall covering, it provides a resilient, washable surface that does not chip or crack when bumped by furniture. Directions for installing it are furnished in *How to Install Armstrong's Linowall* and in specifications available upon request.

CHAPTER TWO

Installation Sundries and Tools

Armstrong's complete line of sundries and accessories includes all the equipment and materials required for installation and maintenance. These sundries and tools, which are essential to attractive and correct installations, are illustrated in Figs. 3a, 3b, 4a, and 4b.

In addition, Armstrong is constantly developing new tools and sundries to improve or simplify linoleum laying. The alert mechanic will watch for announcements of these in *Linoleum Logic* and other Armstrong house organs and publications.

Lining Felt

On wood subfloors, linoleum should always be pasted over a layer of Armstrong's Lining Felt, a special type of felt developed for this specific use. It is colored green for easy identification. See Fig. 4b.

Lining felt is necessary over wood subfloors because the boards expand in summer and contract in winter. This movement of the boards may open the seams or split the linoleum if the linoleum is pasted direct to the boards. However, when the linoleum is pasted to the lining felt, the felt takes up the movement of the boards and prevents strain on the linoleum. For best results, the felt should always be laid *across* the floor boards, as illustrated in Figs. 9, 10, and 12.

Lining felt, in addition to leveling irregularities in the subfloor, makes the flooring warmer, quieter, more resilient, more comfortable, and easier to remove without damage. The use of lining felt over suspended concrete, terrazzo, marble, ceramic tile, or metal is optional.

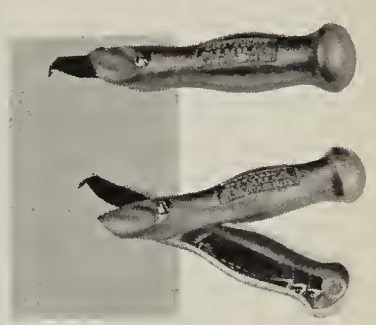
Armstrong's Lining Felt is an aid to good workmanship because it was developed especially for floor work. Its weight is that which laboratory test and field service have proved to be best suited for this work.

Its greater shearing strength provides better protection against buckling and splitting, thus preventing complaints and repairs.

Because of its greater density, this felt withstands scuffing.

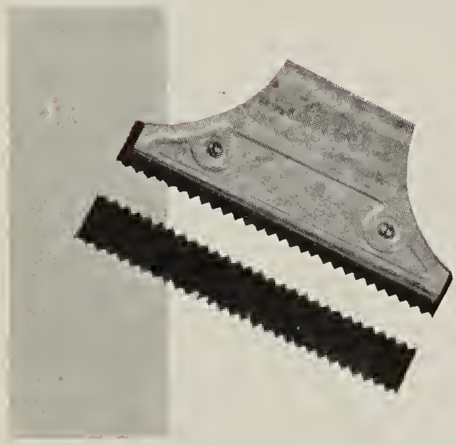
Armstrong's Lining Felt is made in the Company's own

Linoleum Rollers. Made in three sections for easy turning. Weights: 75-pound for residential installations of thin gauges, and 150-pound for heavier gauges. Both are the same size. Parts are interchangeable.



Armstrong's Felt-Base and Linoflor Knife greatly simplifies the cutting of these materials because it has a hooked blade. Three extra double-ended blades are supplied with each knife. Extra blades are stored in the handle.

Linoleum Knives. Properly curved and tempered for easy cutting. Furnished with long or short blades.

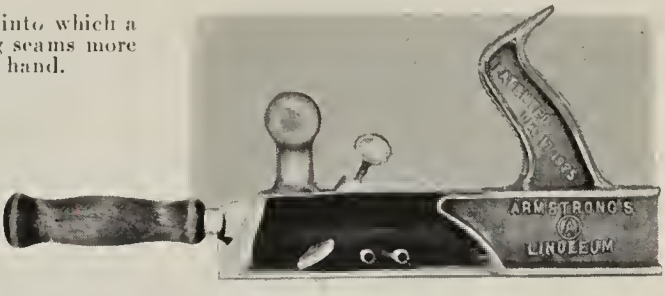


Paste Spreader. Designed to give even distribution of linoleum paste on the floor. The reversible saw-toothed rubber edges can easily be replaced.

Long and Short Straightedges. True guides for the knife when cutting linoleum. Made of heavy steel which will not kink or warp. Lengths: 75″ or 37½″.

Fig. 3a—*In addition to manufacturing all types of resilient floorings, Armstrong provides a full line of laying tools and accessories for linoleum mechanics.*

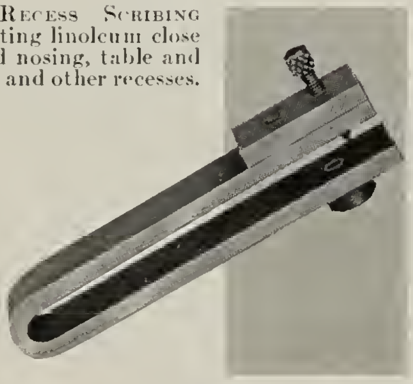
SEAM CUTTER. A convenient device into which a linoleum knife is inserted for cutting seams more accurately and easily than by hand.



PINCH BAR, approximately 14 inches long. Designed with a wide prying edge for removing molding quickly and without damage.

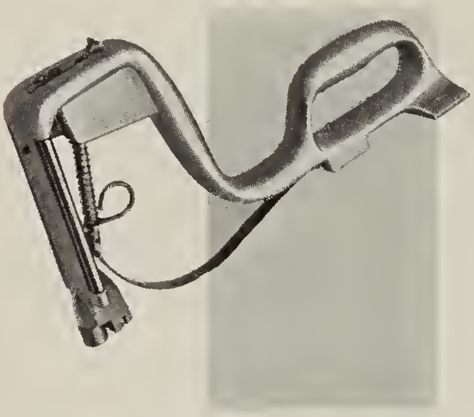
18″ SCRIBING TOOL. A tool for accurate scribing in places which are too wide to use ordinary dividers.

LINOLEUM RECESS SCRIBING TOOL, for fitting linoleum close to stair tread nosing, table and cabinet tops, and other recesses.

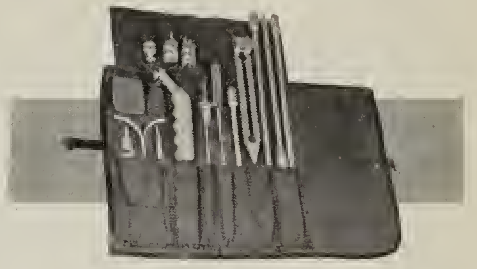


SANDBAGS, for weighting down seams, borders, Linostrips, and Linosets until the paste sets. Made of strong duck securely sewed. Shipped unfilled.

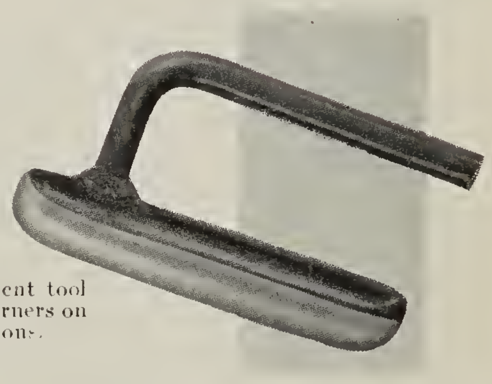
FIG. 3b—*Simplified and perfected by actual use in the Armstrong Laying School, Armstrong laying tools and sundries represent the latest advances in equipment.*



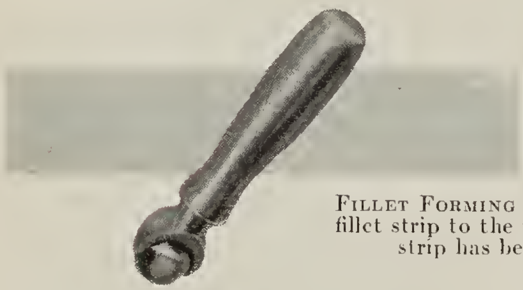
Linoleum Baseboard Scriber, for quick and accurate scribing for fitting linoleum at the wall line. Quickly adjustable for different gauges of linoleum and felt-base.



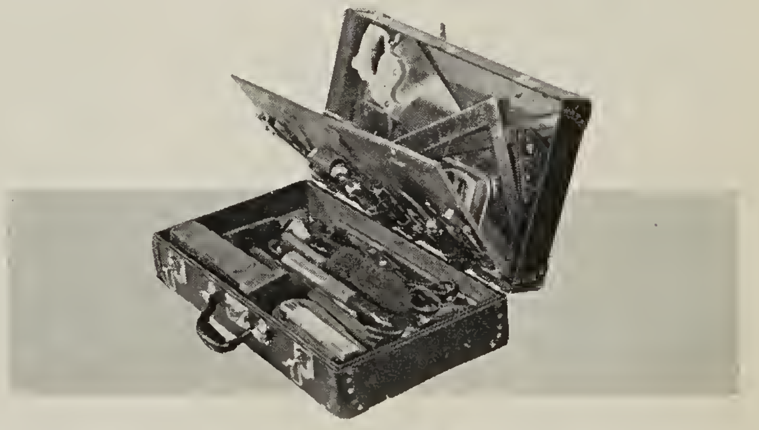
Armstrong's Universal Scriber does all types of scribing and cuts straight or circular Linostrips from ¼″ to 6″ wide as well as circles from 1″ to 7′ in diameter.



Corner Forming Tool. This convenient tool is used for pressing linoleum into the corners on sink-top or cove and base installations.



Fillet Forming Tool, for rolling and shaping fillet strip to the required radius after the fillet strip has been pasted in the corner.



A **Carrying Case** protects tools from loss and injury. This special linoleum mechanic's case is sold by Lowell Leather Goods Company, Lancaster, Pa.

Fig. 4a—*Armstrong supplies the mechanic with a tool for every purpose. Skill in handling these tools amply repays the mechanic for the short time spent in practice.*

Armstrong's Sink-Top Lining in rolls 24″ wide is used as a moisture-resistant foundation for linoleum on sink tops. Rolls are 50 yards long.

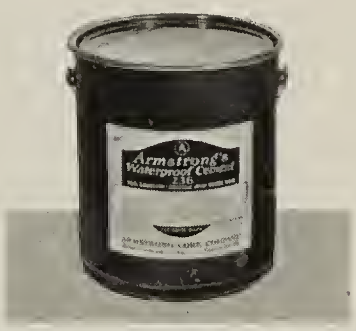
Armstrong's Lining Felt. Specially made for floor work. Greater density prevents over-absorption of paste without sacrificing high bonding power.

Armstrong's Mastic Cement is used for bonding Mastic Armoflor to metal or on-grade concrete subfloors.

Armstrong's Linoleum Paste spreads farther and faster, and insures maximum bond between linoleum, felt, and subfloor.

Seam Protector. A sturdy, 4-inch canvas strip for pasting to the lining felt under linoleum seams, when those seams run parallel to the floor boards.

No. 210 Rustproof Cement is now specified for waterproofing seams and edges of linoleum and Linowall. It provides a strong, waterproof bond. It should not be used with rubber cove base.



Armstrong's Waterproof Cement also is used to protect seams wherever the floor must withstand spilling of water.

Fig. 4h—*Successful floor installations depend considerably upon the use of proper adhesives and lining felt. Armstrong offers a complete line for all needs.*

mill, under the same rigid standard of quality and uniformity as Armstrong's Linoleum. Every lot of felt has to pass severe tests for strength, density, and smoothness. The distinctive green color and the *Circle-A* trademark are guarantees of high, uniform quality. The trademark is printed every three feet along the roll, serving as a convenient measuring guide. This lining felt is furnished in 50-yd. rolls, 36″ wide.

Saturated lining felt should never be used with linoleum floors. The saturant impairs the shearing qualities of the felt and thus affords less protection to the linoleum. Saturated felt also makes linoleum hard to remove.

Linoleum Paste

Linoleum paste is used: (1) to bond the lining felt to suspended wood, concrete, ceramic tile, marble, or terrazzo subfloors; (2) to bond the linoleum to the lining felt.

The difference in cost between good paste and cheap paste is so small a part of the total cost of a job that there is little reason to risk dissatisfaction by using inferior or unreliable pastes.

Armstrong's Linoleum Paste is a strong adhesive developed especially for floor work. Free from all materials injurious to linoleum or felt, it assures a thorough and permanent bond. Furthermore, its high spreading capacity means that fewer gallons are required to cover a given area. The ease with which this paste spreads reduces the time required for installing floors.

The most important reason, however, for using Armstrong's Linoleum Paste with Armstrong's Linoleum and Armstrong's Lining Felt is that responsibility for the quality of all materials is placed upon one dependable manufacturer. Therefore, satisfactory adjustments are assured if, through the fault of any one of these materials, difficulty later develops.

Armstrong's Linoleum Paste is supplied in 1-qt., 2-qt., 1-gal., 2-gal., 3-gal., and 5-gal. cans; as well as in 30-gal. drums.

Seam Protector

Armstrong's Fabric Seam Protector is a piece of fabric 4″ wide, furnished in rolls 100 yards long. It is used when it is necessary to lay the linoleum with the seams running the same direction as the floor boards, as in Fig. 11; or at doorways when the boards in adjoining rooms do not run in the same direction, as in Fig. 20. The seam protector prevents seasonal expansion of the floor boards from pulling the seams apart.

No. 236 Waterproof Cement

Armstrong's No. 236 Waterproof Cement is used for bonding the seams and edges of linoleum in rooms where water is likely to be spilled. It is unnecessary to use waterproof cement under the whole area of the linoleum.

Waterproof Cement is supplied in 1-pt., 1-qt., 1-gal., and 5-gal. cans. Its spreading capacity is 60 to 80 sq. ft. per gal.

No. 210 Rustproof Cement

Armstrong's No. 210 Rustproof Cement is a waterproof, rustproof adhesive that can be used for any linoleum installation for which No. 236 Waterproof Cement was formerly specified; but it should not be used for rubber cove base or plinth blocks. While it is slightly more expensive than No. 236, it is much easier to work.

No. 210 *must* be used at all points where contact with metal is involved, and also with Linowall. It is highly desirable for all sink-top work. It is packed in 1-gal. and 5-gal. containers.

Mastic Cement

Armstrong's Mastic Cement is used for bonding Mastic Armoflor to concrete grade subfloors. It is sold in 1-gal. and 5-gal. cans; also in 30-gal. drums.

Topping Cement

Armstrong's Topping Cement, which is supplied in 1-gal. and 5-gal. cans, as well as in 30-gal. drums, is used in the preparation of Armstrong's Floor Fill. Specifications will be supplied.

Cork Tile Sealer

Armstrong's Cork Tile Sealer is used for priming chalky or dusty concrete floors, as described in Chapter III. It is supplied in 1-gal. and 5-gal. cans, and in 30-gal. drums.

Cleaning and Finishing Materials

Armstrong's Line of floor maintenance products—Floor Cleaner, Linogloss Wax, Linogloss Applicators, and Brushing Lacquer—is described in Chapter XXII on the care of floors.

TOOLS

Linoleum Roller

The use of a linoleum roller is essential to good laying because it causes the linoleum to conform to any unevenness in the subfloor. Armstrong's Linoleum Rollers are made in three sections. This construction permits the roller to be turned without marring the face of the linoleum. The center section "floats" on the axle, so that it conforms more readily to uneven subfloors.

Armstrong's 150-lb. Roller is normally used on the larger commercial installations; whereas the 75-lb. roller, because of its greater portability, is normally used in residences.

The face of the roller should be kept clean at all times. A few drops of oil on the bearings will insure easy operation.

Saw-toothed Rubber Paste Spreader

Armstrong's Rubber Paste Spreader has reversible, saw-toothed edges, with extra edges available for replacement. This type of spreader insures even distribution of the paste and helps to produce a tight bond between the linoleum and the lining felt or subfloor. The spreader should always be cleaned after use. It should never be used to spread Armstrong's Waterproof, Rustproof, or Mastic Cement.

Linoleum Knives

Armstrong offers two types of linoleum knives. One has a long blade, the other a short blade. Every mechanic should have both types, in order to handle every type of job. To insure clean cutting and fast work, the knife should always be kept sharp.

Felt-Base and Linoflor Knife

Armstrong's Felt-Base and Linoflor Knife consists of an aluminum alloy handle and attachable blades. A cutting hook is ground into each end of the blade, so that felt-base materials can be cut rapidly and accurately with a ripping motion. The hooked blade speeds cutting because it does not permit the saturant in the felt to adhere to it. The handle is hollow so that blades may be stored inside. Extra blades are supplied in packages of five.

Seam-Cutting Tool

Armstrong's Seam Cutter saves time and labor in laying Medium, Heavy, $\frac{3}{16}''$, and 6 mm. gauges of Battleship, Plain, Jaspé, Marbelle, and Monobelle linoleum. It also insures straighter and more close-fitting seams than can usually be made by hand. For trimming and cutting seams in Standard gauge and in all pattern goods, however, a straightedge and an ordinary linoleum knife are more satisfactory. Directions for operating are given in Chapter VI.

Recess Scribing Tool

Armstrong's Recess Scribing Tool is used for fitting linoleum to stair tread nosings, table tops, and other recesses or edges. It insures more accurate work than can be obtained by ordinary measuring. This tool should be kept clean. All moving parts should be well oiled to prevent corrosion.

18″ Scribing Tool

Armstrong's 18″ Scribing Tool permits accurate scribing in places where ordinary dividers are not wide enough. For methods of scribing, see Chapter X.

Baseboard Scriber

Armstrong's Baseboard Scriber provides a quick, accurate means of fitting linoleum and felt-base materials at the wall line. It can be easily adjusted for different gauges.

Pinch Bar

Armstrong's Pinch Bar, approximately 14″ long, is designed with a wide prying edge for removing quarter-round molding without damage.

Straightedge

Armstrong's Straightedge is a true, sturdy piece of steel, 75″ long, for guiding the linoleum knife in cutting. It does not kink or warp, and insures straight cuts.

Corner Forming Tool and Fillet Roller

Armstrong's Corner Forming Tool and Armstrong's Fillet Roller will be found useful when Armstrong's Flash Type Cove and Base is to be installed. These tools are used to produce the proper curvature in the fillet strip and in the linoleum. The rubbing surfaces of these tools should be kept clean and smooth.

Sandbags

Armstrong's Sandbags are used for weighting down seams, borders, and Linosets in linoleum floors. They are made of heavy duck, especially sewed. Sandbags should always be used instead of bricks or other weights because they conform more closely, and with more uniform pressure, to uneven surfaces. They also prevent denting. Sandbags (empty) are packed 12 to a package. The bags should be filled with washed sand, so that no dust will sift through the canvas. To be sure that the bags lie flat on the seam, they should be about three fourths full, with the open end lapped and securely sewed to prevent leakage.

Armstrong's Custom-Craft Dies

To simplify the production of Linosets, Armstrong has developed a set of handy Custom-Craft Dies, shown in Fig. 116. The metal dies in this set will cut linoleum into circles, rosettes, stars, scrolls, chevrons, petals, and leaves. These design elements can be combined into an almost unlimited number of effects. The method of using the Custom-Craft Dies is fully described in Chapter XVIII.

Universal Scriber

Armstrong's Universal Scriber is a new and remarkable tool that quickly and easily performs a wide variety of scribing, scoring, and cutting operations.

The various attachments furnished with it make it possible for the mechanic to do, with one reasonably priced tool, what would otherwise require special equipment costing several times as much.

For example, the Universal Scriber not only will do wall scribing and recess scribing, but also will cut straight or circular Linostrips from ¼″ to 6″ wide; and circles or rings from 1″ to 7′ in diameter.

Other attachments are supplied for scribing metal or rubber cove base; for scribing Linowall to linoleum cap strip; and for scribing curved Linostrips around bathtubs.

The use of this tool for cutting Linosets is explained in Chapter

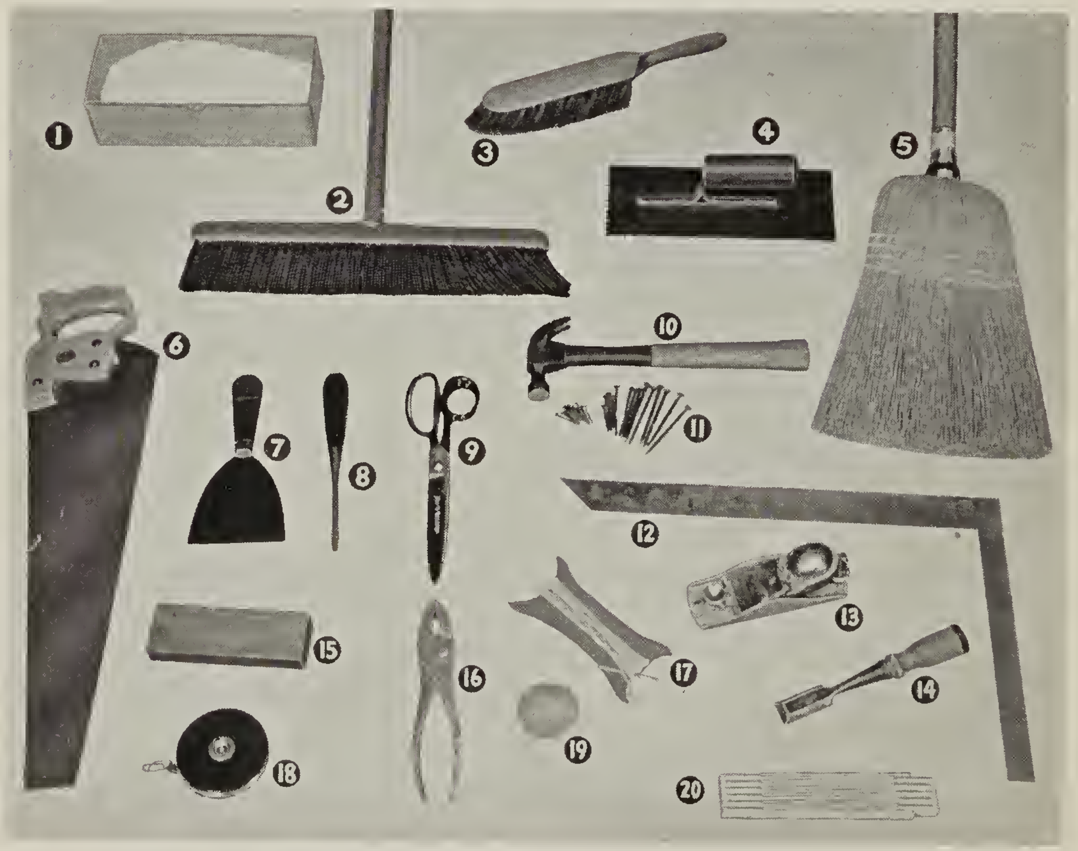


Fig. 5—*The special tools and equipment above are;* (1) *plaster of Paris,* (2) *dust brush,* (3) *brush,* (4) *trowel,* (5) *broom,* (6) *saw,* (7) *spatula,* (8) *screwdriver,* (9) *felt shears,* (10) *hammer,* (11) *nails,* (12) 12″ *square,* (13) *block plane,* (14) *chisel,* (15) *carborundum,* (16) *pliers,* (17) *chalk line,* (18) *tape line,* (19) *chalk,* (20) *folding rule.*

XIX. Other operations also are described in the same chapter.

Custom Floor Cutter

Although Armstrong's Custom Floor Cutter has been superseded by Armstrong's Universal Scriber, mechanics who already own a Custom Floor Cutter will find directions for operating it in Chapter XIX.

Miscellaneous Tools

In addition to the tools described above, the linoleum layer should equip himself with the following tools, most of which are shown in Fig. 5.

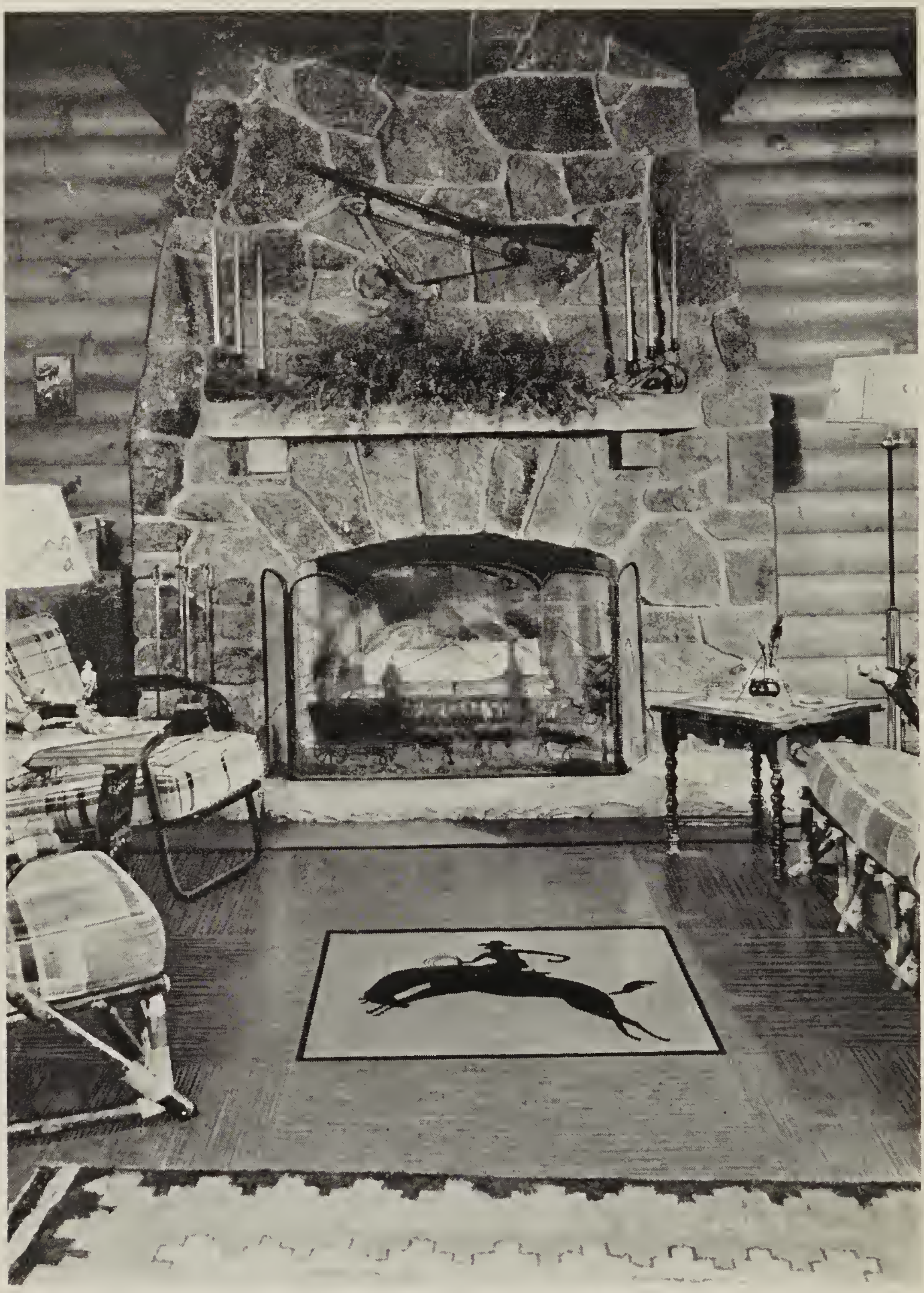
Panel Saw
Coping Saw
Combination Square, Level, and Straightedge . . . 24-inch
Square . . . 12-inch
Pliers . . 6-inch
Screw Driver . . . 9-inch
Steel Tape Line . . . 50 feet
Folding Zigzag Rule . . . 6 feet
Plasterer's Trowel (Notched on one side and end)
Hammer (Carpenter's)
Block Plane
Compound Tin Shears
Felt Shears . . . 10-inch
Putty Knife . . . 2-inch blade
Putty Knife . . . 4-inch blade
Machinist's Dividers
Carpenter's Dividers
Carborundum Stone
Chalk Line . . . 50 feet
Sandpaper (Fine, Medium, and Coarse)
Chalk
Rasp
Three-Cornered File (Metal)
Straight Blade Knife
Fine Steel Wool
Pencils
Dust Brush
Brush . . . 3-inch
Spatula . . . 6-inch blade flexible
Scraper and Burnisher
Plumb Bob
Nails
Steel Brads
A small quantity of plaster of Paris for repairs on concrete subfloors

Care of Tools

Tools should be kept clean and in good order at all times. This not only permits faster and more accurate work, but it makes a favorable impression on employers and customers.

Tool Carrying Case

A strong carrying case large enough to hold all tools will save time and effort for the mechanic and will prevent loss or damage to tools. The fiber case shown in Fig. 4a can be obtained from the Lowell Leather Goods Store, 38 West Orange Street, Lancaster, Pennsylvania.



This mountain home living-room contains Hunter Green Jaspé No. 19. Border is of Terra cotta No. 25 with Linostrip of Black No. 27. Linoset is Nos. 25 and 27.

CHAPTER THREE

Preparing Subfloors

Linoleum can be installed over suspended wood, concrete, metal, terrazzo, marble, or ceramic tile.

Linoleum should never be installed on subfloors in direct contact with the ground, on or below grade. This means that linoleum should never be installed in basements.

All subfloors must be smooth, level, clean, thoroughly dry, free from hollow spots, rough spots, or splinters, and cleaned of all wax, oil, paint, grease, rust, dust, and dirt.

The floor should be given a final sweeping just before the felt or linoleum is laid.

In old rooms, quarter-round moldings should be removed as the first step in preparing the subfloor. In new construction, the base moldings may be fitted but should not be nailed until after the linoleum is laid. The final coat of paint should not be applied to the molding until the laying has been finished.

Removing Paint, Varnish, Oil, Wax

On all types of subfloors, all paint and varnish should be entirely removed by sanding, if necessary, or with paint and varnish remover.

Oiled or waxed floors should be machine sanded, if necessary, or thoroughly scrubbed with a strong solution of tri-sodium phosphate (Oakite, Climalene, etc.), and then thoroughly rinsed.

A gasoline blowtorch or acetylene paint burner outfit (sold by plumbing and motor jobbers) may also be used for removing paint, as shown in Fig. 6.

Wood Subfloors

Linoleum and lining felt should not be laid over single wood subfloors. If the single floor consists of tongue-and-groove boards, it should be covered with Armstrong's ⅛″ Temwood, Fig. 12. (See directions for nailing Temwood, page 24.) If the single floor consists of straight-edged boards, it should be covered with ⅞″ tongue-and-groove boards not over 3″ wide.

In double floors, the bottom layer may be straight-edged boards, but the top layer *must* be tongue-and-groove, as shown in Figs. 9, 10, and 11. In wood subfloors, cracks wider than ⅛″, and all holes larger than ¼″ diameter, should be completely filled with snugly fitting pieces of wood or plastic wood. All defective boards should be replaced with new, sound material. Loose boards should be renailed to make them rigid and secure, as shown in Fig. 7. All nails should be countersunk, and all uneven joints should be planed or sanded smooth and even.

If a wood subfloor is extremely uneven and cannot be planed and repaired satisfactorily, it can be leveled with Floor Fill, or, if it is a tongue-and-groove floor, with a layer of ⅛″ Temwood.

Applying Temwood

Temwood should be used over tongue-and-groove boards only, never on straight-edged boards.

It should be laid with the smooth side down, so that the rough or "wire" side will be exposed to give a better bond when the adhesive is applied to it. All seams in the hardboard should be true and fitted close, with not over 1⁄16″ clearance. The hardboards should be securely nailed to the underfloor with 2d rosin-coated nails spaced not over 6″ apart in both directions and beginning at the outside edges of each piece laid.

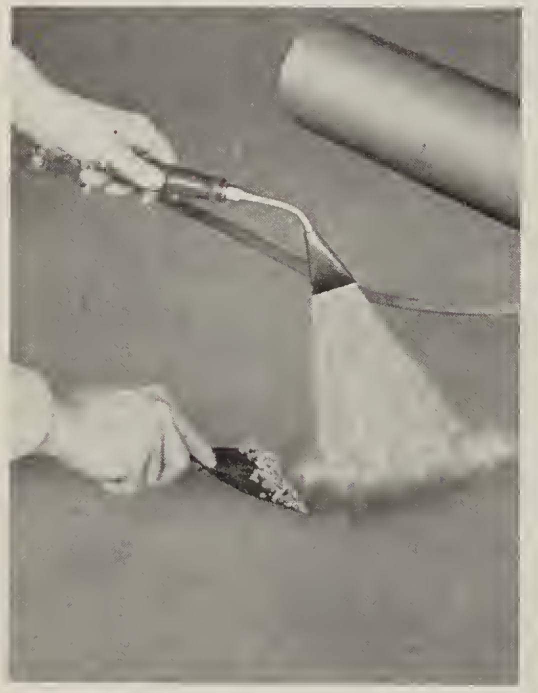


Fig. 6—*Use a gasoline blowtorch or acetylene paint-burner to remove paint. Remove all wax, oil, and dirt.*

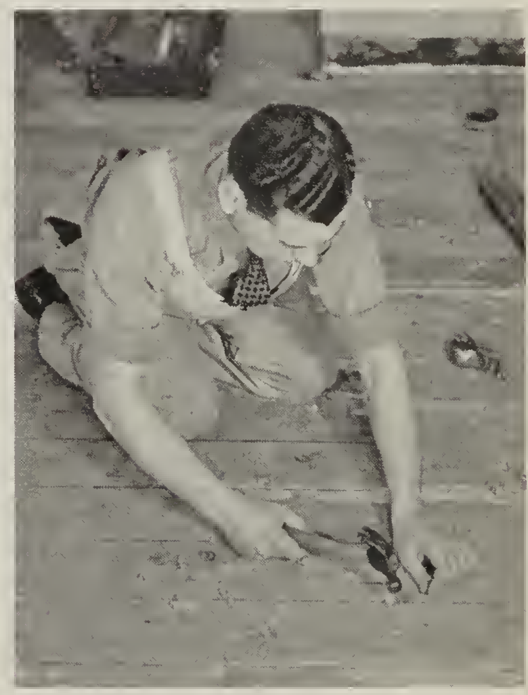


Fig. 7—*In preparing floors, renail all loose boards. Countersink the nails and plane or sand uneven joints.*

Temwood should be covered with Armstrong's Lining Felt before installing the linoleum with Armstrong's Linoleum Paste.

Concrete Subfloors

Linoleum should never be installed on any concrete subfloor in direct contact with the ground, on or below grade. (Armstrong's Asphalt Tile is the only type of resilient flooring recommended for such installations. Armstrong's Mastic Armoflor or Felt-Cushion Mastic Tile may be installed over concrete in direct contact with the ground on grade, but not below grade.)

For concrete to be sufficiently dry to serve as a satisfactory subfloor for linoleum, *there must be good ventilation in all spaces between the ground and the concrete subfloors.*

The surface of all concrete subfloors, treads, and landings should be smooth, even, level, and hard—free from expansion joints, depressions, scale, or foreign deposits of any kind.

All oil, wax, and varnish should be entirely removed as described on Page 23. A single coat of paint that is solid, dry, and well bonded to the concrete need not be removed, but should be roughed with a wire brush or coarse sandpaper. Where there are two or more coats, all should be removed by the methods described on Page 23.

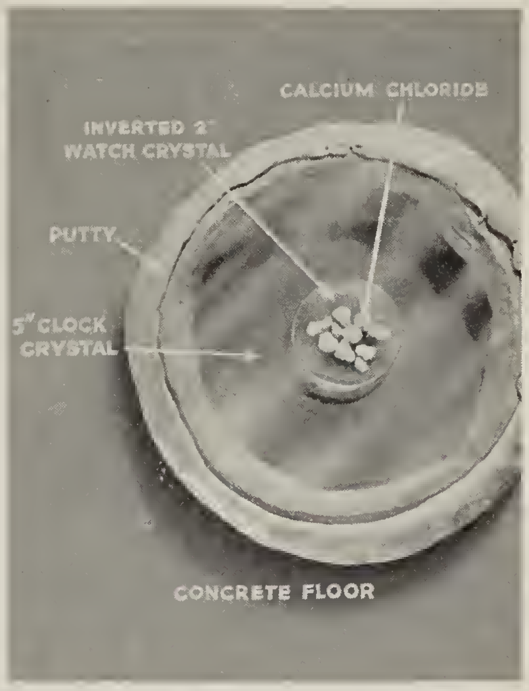


Fig. 8—*Before laying linoleum on concrete floors, make this dampness test as described below and on page 26.*

All expansion score marks or cracks should be filled with a mixture of equal parts of portland cement and plaster of Paris, finished flush with the surface of the concrete. A chalky or dusty surface should be swept clean and primed with Armstrong's Cork Tile Sealer.

Dampness Test—Before laying the linoleum, test the concrete for dampness as follows:

1. Form a securely bonded ring of putty 6″ in diameter and ½″ high on the concrete at each

corner and at the center of the room. See Fig. 8.

2. Place a level teaspoonful of granulated anhydrous calcium chloride in a watch crystal within each ring, and cover each ring with a clock crystal, pressing the glass down on the putty so as to keep out all outside air.

3. If the floor is damp, beads of moisture will appear on the watch crystal in between 24 to 48 hours, and the calcium chloride will be all or partly dissolved. Over cinder-fill concrete, drill holes through the sand-cement topping within the putty ring.

This test is not an absolute guarantee of dryness, but merely an indication of excessive moisture. Wherever possible, concrete should be permitted to dry out for several months with heat and ventilation. The linoleum should not be laid until the concrete is thoroughly dry.

Inspect concrete subfloors to find out whether the finish is a float finish or a trowel finish.

If it is a float finish, make sure that the concrete can be swept clean. Also, tap the floor to see if there are any hollow places. Sometimes, the topping or finish concrete does not have a good bond to the underlayer and will not form a suitable subfloor. If this is the case, call the architect's or owner's attention to this defect and suggest that the necessary repairs be made. Otherwise, refuse to lay the linoleum or insist that the owner take the responsibility for any trouble that may result.

If there are rough spots in the concrete subfloor, do not depend upon the linoleum paste to take up this roughness. The floor should be leveled with Armstrong's Floor Fill.

If the concrete is wavy, as a result of poor troweling, linoleum can be laid over it, but the waves will show through and cause an unpleasant effect in the linoleum floor. The waviness should be called to the attention of the architect or owner, who should take full responsibility for the work if the necessary leveling is not desired.

Sometimes, it is possible to level such a floor with a machine used for grinding terrazzo. To prevent dust, the floor should be wet before grinding; but no more water than is absolutely necessary should be used, because it will make drying difficult.

If concrete has frozen before it has set up, it will be scaly and cracked. Such a surface is not a good foundation for linoleum, and, for best results, should be replaced with a new top coat.

Where concrete floors are newly installed or have been replaced in remodeling work, at least 6 to 8 weeks should be allowed for complete drying in a well-ventilated building that is heated during the winter. Concrete with a hard, glazed finish, or concrete that has been excessively troweled, may require several months for drying because such a finish prevents air from getting through to evaporate the moisture. Concrete treated with a cement hardener also delays drying.

Ceramic Tile, Terrazzo, and Marble Subfloors

Linoleum should never be laid over ceramic tile, terrazzo, or marble subfloors in direct contact with the ground, on or below grade level.

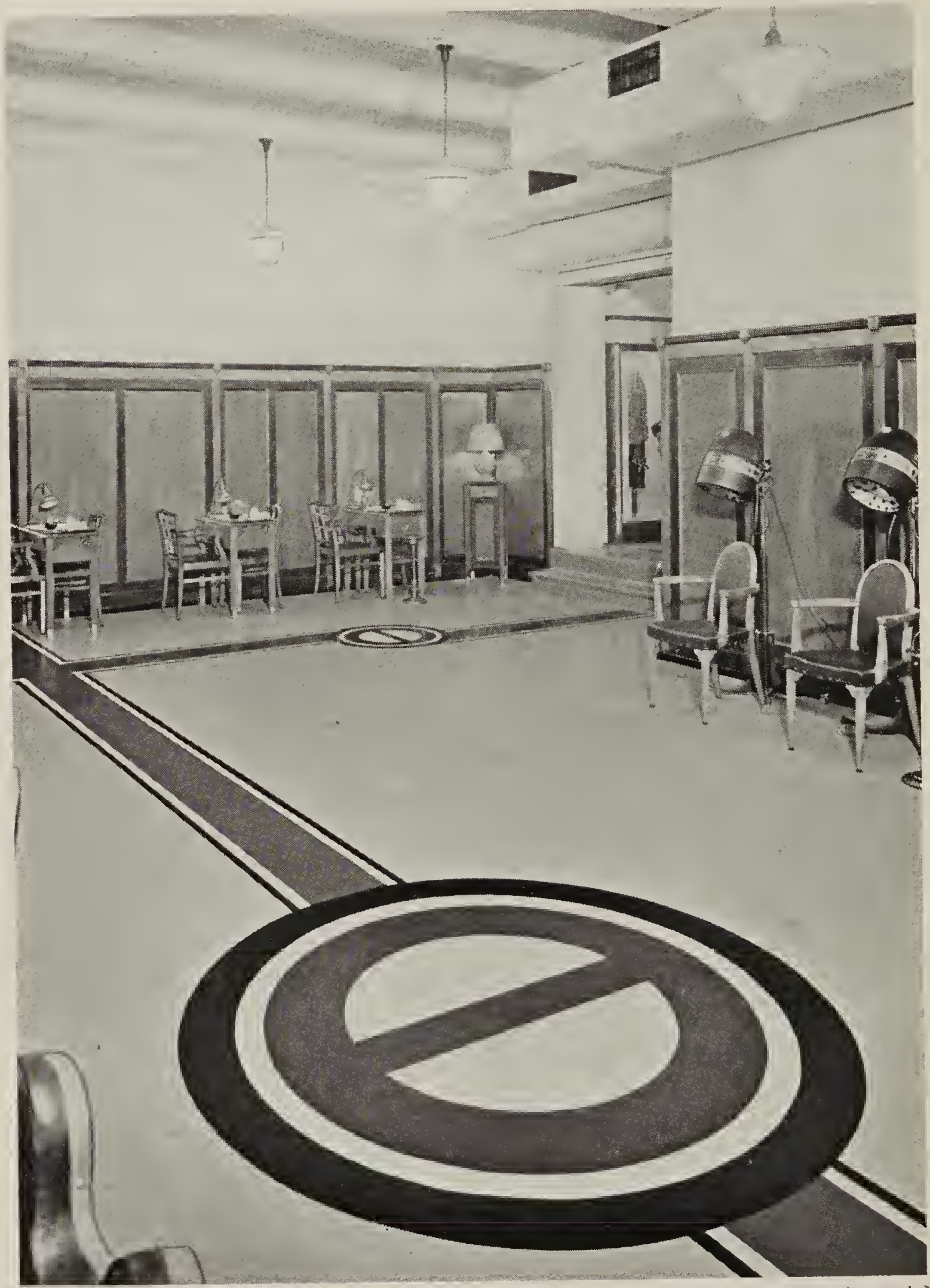
The floor should be cleaned of all paint, varnish, wax, or oil as described on Page 23. If the floors are badly worn or have low places, they should be leveled with floor fill.

The floors should be tested for dampness as described on Page 25, and the linoleum should not be laid until the subfloor is thoroughly dry.

The subfloor should be thoroughly scrubbed with a scrubbing machine using soapy water and clean, sharp sand. Any joints or cracks should be repaired with a mixture of portland cement and plaster of Paris finished flush with the surface.

Metal Subfloors

Metal subfloors should be true and even, and should be thoroughly cleaned of all dirt, grease, paint, rust, etc., as described on Page 23. If there are protruding rivets, welds, or lap joints, the floor should be made level with Armstrong's Floor Fill. Rust-proof Cement No. 210 must always be used on metal subfloors.



In the beauty salon of Mayer Israel & Company, Inc., of New Orleans, note how the large circles in foreground and background provide a striking break in the traffic guides.

CHAPTER FOUR

Preliminary Steps

Checking Materials—Before leaving the store, check your linoleum, felt, adhesives, sundries, tools, and accessories to make sure that you have everything you need to complete the job without returning to the workroom. As soon as you arrive on the job, check the dimensions of the room or rooms against a blue print or sketch furnished you at the store.

Give the subfloor a final inspection to make sure that it is thoroughly clean and smooth.

Remove all movable fixtures and furniture. Take the doors off their hinges, and remove quarter-round moldings.

Lay Out the Floor—Before cutting linoleum or lining felt, decide in which direction the strips are to run.

For best results, the lining felt and the linoleum should be laid so that their seams will run *across* the floor boards, as shown in Figs. 9, 10, and 12.

If laying the linoleum this way would mean wasteful cutting, it can be laid with the seams running in the direction of the floor boards, but the seams should be protected with Armstrong's Fabric Seam Protector as shown in Fig. 11.

Jaspé is usually laid with the graining running in the direction of the traffic through the room, which is ordinarily lengthwise.

Where the same pattern of linoleum is to be used in adjoining rooms, it is best to run a strip of linoleum through the doorway clear across both rooms. This eliminates a seam at the doorway where the floor gets extra-heavy wear.

If the boards in the floor run opposite to the direction of the boards in the adjoining room, plan the job so that the seams in the felt and linoleum do not fall directly over the meeting point of the two floors. By having no seams at this point, there will be less danger of the seasonal expansion and contraction of the floor boards pulling the seams apart or splitting the linoleum.

Economies in Material

In a room that is only slightly wider than 6′, 12′, 18′, 24′, etc., the use of a border will often

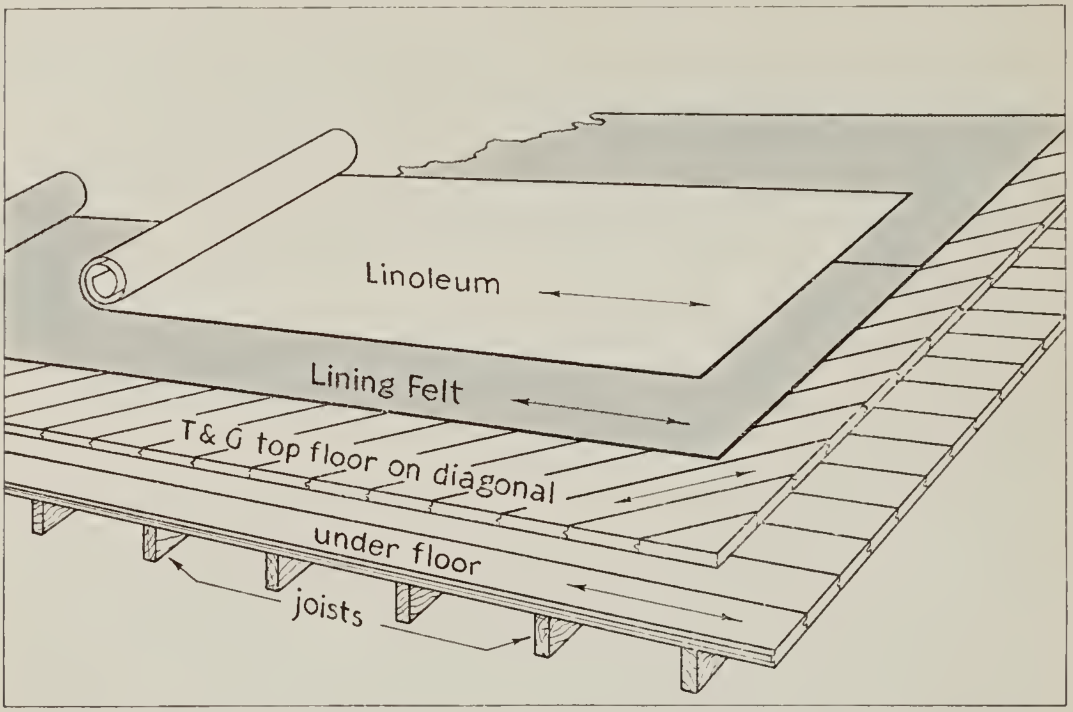


FIG. 9—*Where tongue-and-groove floor runs on a diagonal with the underfloor, linoleum strips should be laid at a 45 degree angle with the top floor. Lining felt should be laid in the same direction, with seams running as shown above.*

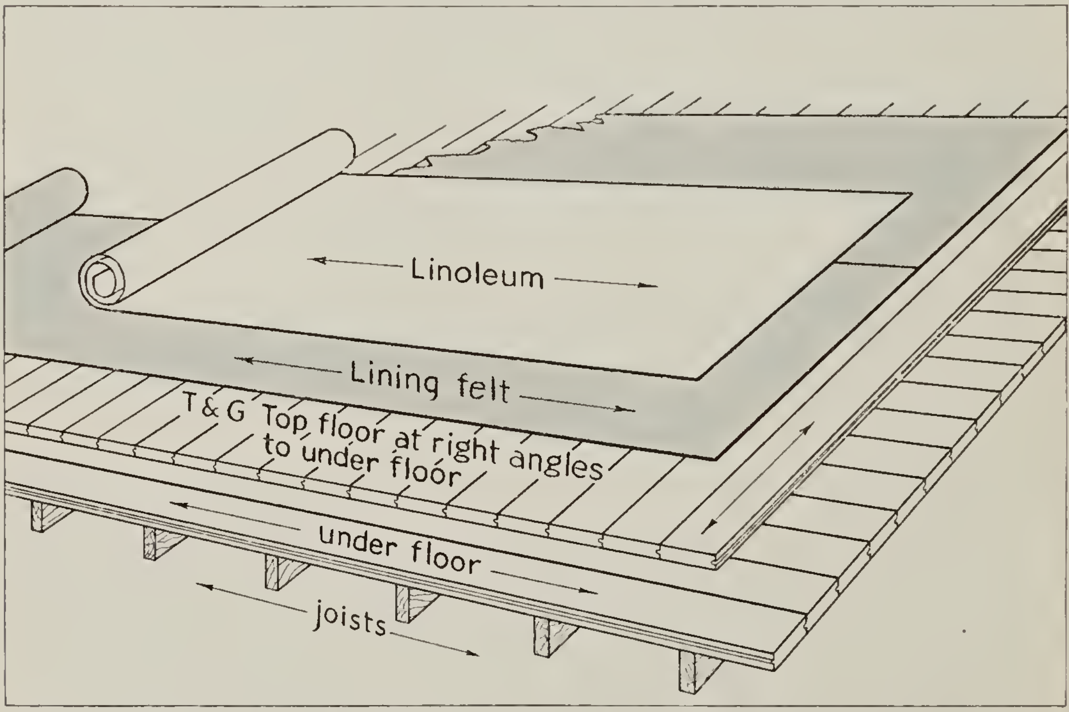


FIG. 10—*If the tongue-and-groove top floor runs at right angles to the underfloor, the same principle should be observed as illustrated in Fig. 9. For best results, lay both the linoleum and the lining felt across the floor boards, as shown here.*

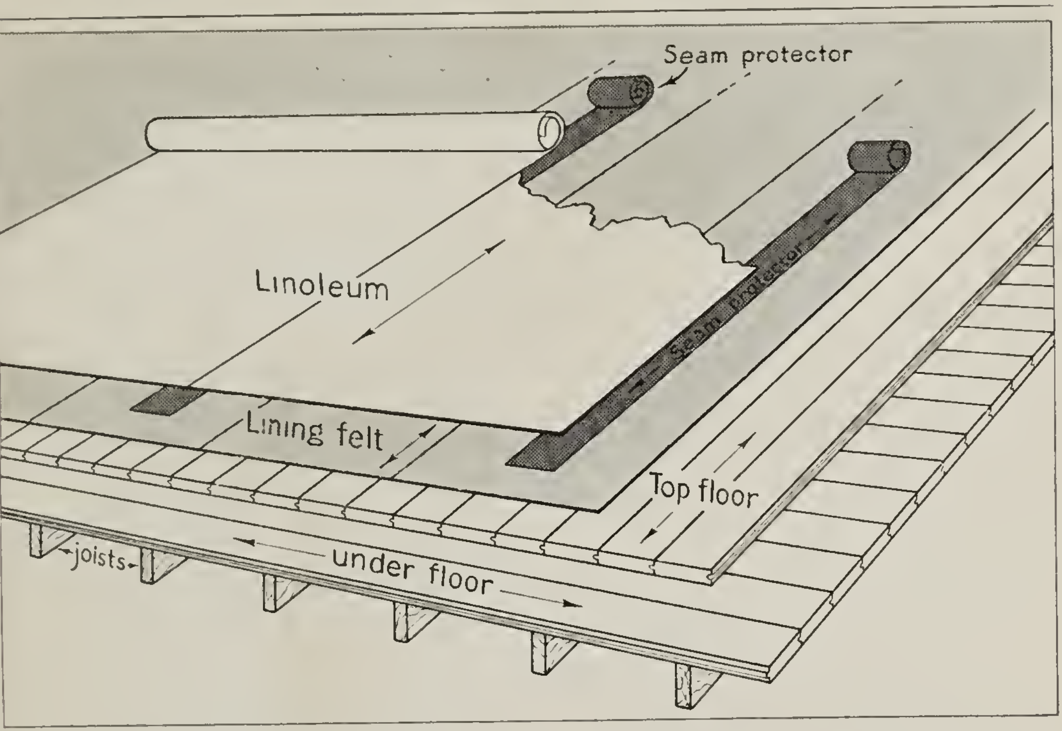


FIG. 11—*Where laying the linoleum across the floor boards would involve wasteful cutting, the mechanic may wish to follow the direction of the boards. In this case, he should protect all seams with Armstrong's Fabric Seam Protector.*

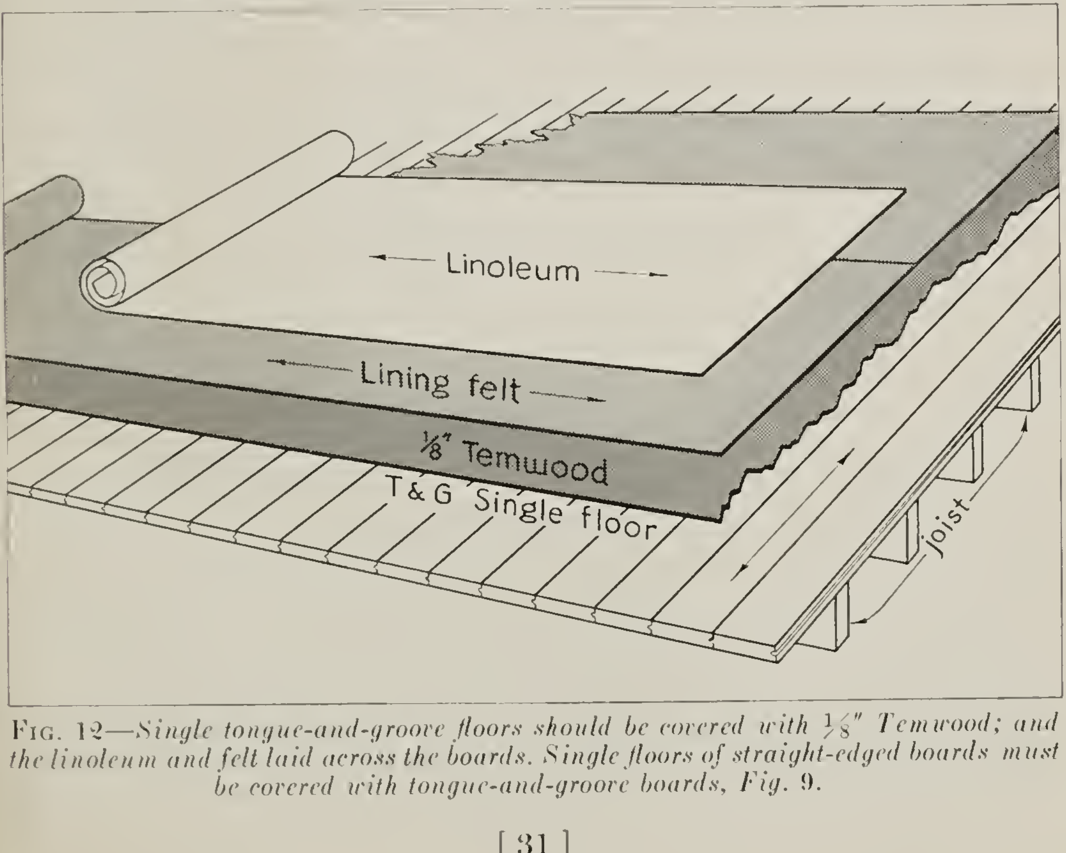


FIG. 12—*Single tongue-and-groove floors should be covered with 1/8" Temwood; and the linoleum and felt laid across the boards. Single floors of straight-edged boards must be covered with tongue-and-groove boards, Fig. 9.*

make it unnecessary to cut up a 6′ width of linoleum in order to cover the few remaining inches. See the example in Fig. 13.

Slanting Walls

If one wall of a room is noticeably slanting and has a doorway in it, start laying the linoleum at this slanting wall and lay a full 6′ width of linoleum parallel with the slanting wall. Continue laying 6′ widths all the way across the room. This will leave a wedge-shaped area to be covered when the opposite wall (which has no doorway) is reached. This wedge-shaped piece can be fitted by scribing.

The wedge-shaped piece should always be laid along the wall that has no doorway. The linoleum near a doorway always gets extra wear. Therefore, it is desirable to have seams as far away as possible.

If there is no doorway in the noticeably slanting wall, as shown in Fig. 14, start laying at the

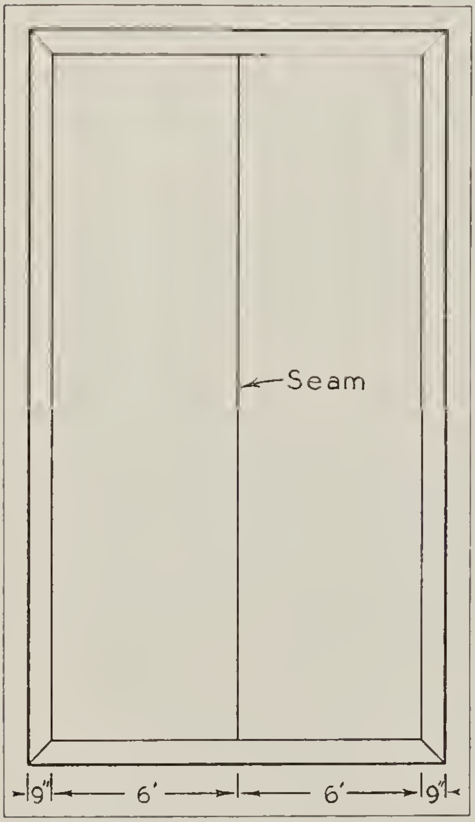


Fig. 13—*If a room is slightly more than 6′, 12′, 18′, or 24′ wide, take up the remaining few inches with a border.*

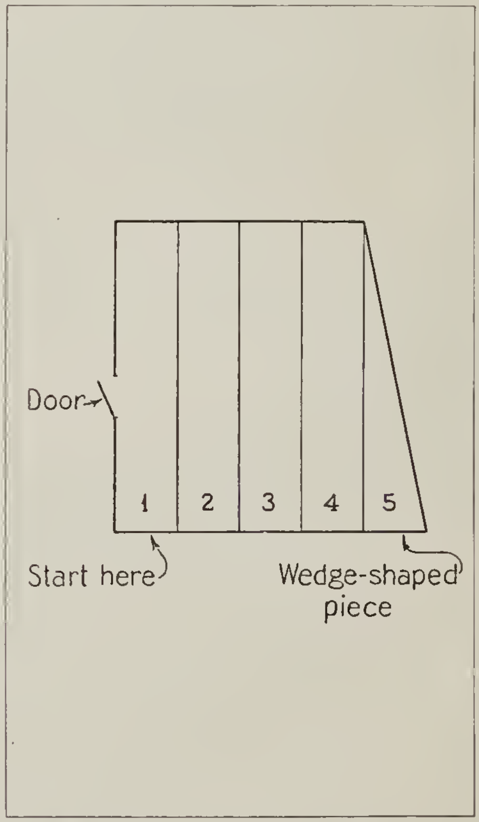


Fig. 14—*Lay 6′ widths of linoleum at a wall with doorway, laying a wedge-shaped piece at the opposite wall.*

opposite wall and lay full 6′ widths across the room, laying the wedge-shaped piece against the slanting wall by scribing.

Where a border is to be installed in a room that is very irregular, lay the border parallel with the walls, so that the edges of the field also will be parallel with the walls. See Fig. 15.

Large Buildings

If the linoleum is to be laid in a large building, such as a school or hospital, select one room as your workroom and use this room for cutting the linoleum and for storing your materials. By using this room as a stock room for linoleum, felt, paste, and other materials, loss of time and equipment will be prevented.

For example, a large drum of linoleum paste may be kept in this room and ladled into smaller buckets that can be easily carried to other rooms where the linoleum is being laid.

To simplify the planning of the job, assign a number to each room in which linoleum is to be laid. Then measure each of these rooms and write the measurements of the room opposite the number of the room. These notes should be made in a notebook. The notebook is then taken to the temporary workroom so that it may be referred to as necessary.

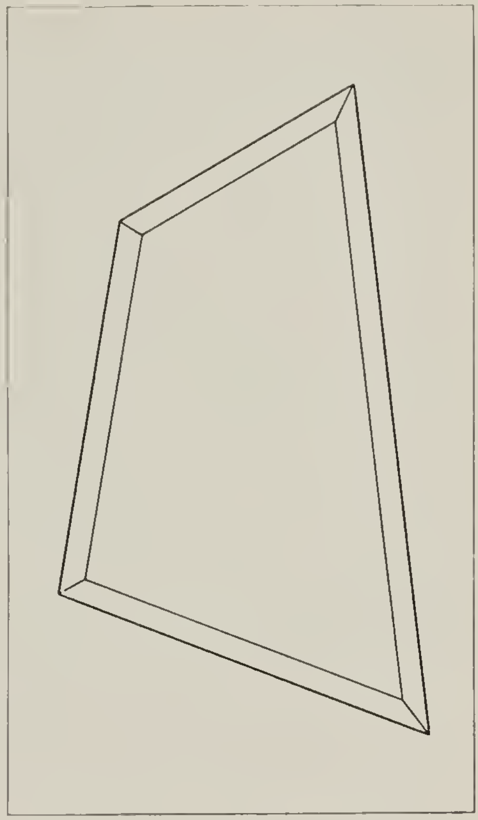


Fig. 15—*Lay the borders in irregular rooms so that the edges of the field will be parallel with the walls.*

By having the measurements of all the rooms available before any linoleum is cut, it is often possible to prevent waste in cutting. For example, if room No. 1 required 4 pieces 17′6″ long and 1 piece 19′ 6″ long, the linoleum could be cut from a roll containing 60 sq. yds., with a resulting waste of only 6″.

As each roll is cut, the yardage contained in it should be marked in the notebook. At the end of the day, the total yardage can be found by adding these figures.

Each strip cut from the roll should be marked to indicate the room where it is to be laid, and its position in the room.

For example, a piece marked "Piece No. 1 in Room No. 1" indicates that this piece will be the first piece laid in Room No. 1. A piece marked "Piece No. 2 in Room No. 1" indicates that this piece will be the second piece laid in Room No. 1.

Handling Linoleum

Proper handling of linoleum can save much needless expense by preventing waste of material and claims from the customer.

In cold weather, linoleum is likely to crack if roughly handled or unrolled when cold. Therefore, it should be stored in a room of at least 70° F. temperature for 48 hours before unrolling. The room in which the linoleum is laid should be kept at a temperature of at least 70° F. for 24 hours before work is started. This temperature of 70° F. should also be maintained during the laying.

Armstrong's Linoleum is delivered in crates especially designed to give it complete protection in transit. The crate, Fig. 16, should be carefully opened in such a way as to prevent the tools that are used from damaging the material.

When the linoleum is delivered to the job, remove the wrapper carefully and loosen the roll.

Crated or uncrated linoleum should never be dropped to the floor from a vertical position. Instead, use a truck as shown in Fig. 16, or place a roll of lining felt or a few sandbags next to the upright roll and lower the roll gently to the floor.

When crated rolls are stood on end, it is better to lower the crates to the floor before they are opened. Then there will be no danger of dropping the linoleum to the floor.

Linoleum should be stored in a dry place. The rolls should be stood on end until they are used.

The edges of uncrated rolls of linoleum should always be protected when the linoleum is being shipped to the job from the workroom. Truck drivers should be instructed in the proper methods of handling linoleum.

When linoleum is being installed, take care not to drop or lay heavy tools or linoleum rollers on it. After the linoleum has been installed, it should be covered with heavy paper until the room is ready for use.

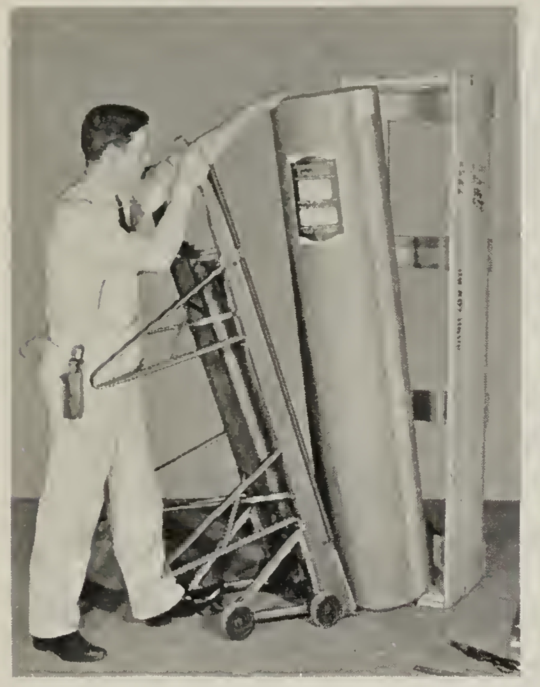


FIG. 16—*Linoleum crates should be carefully opened to eliminate the danger of tools' damaging the linoleum.*

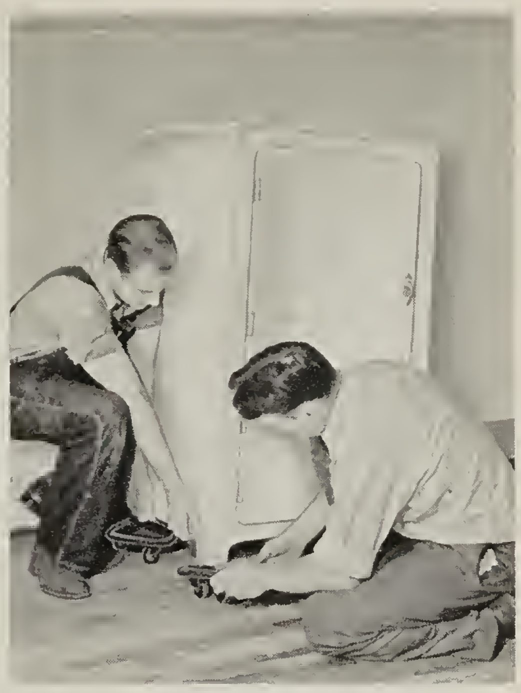


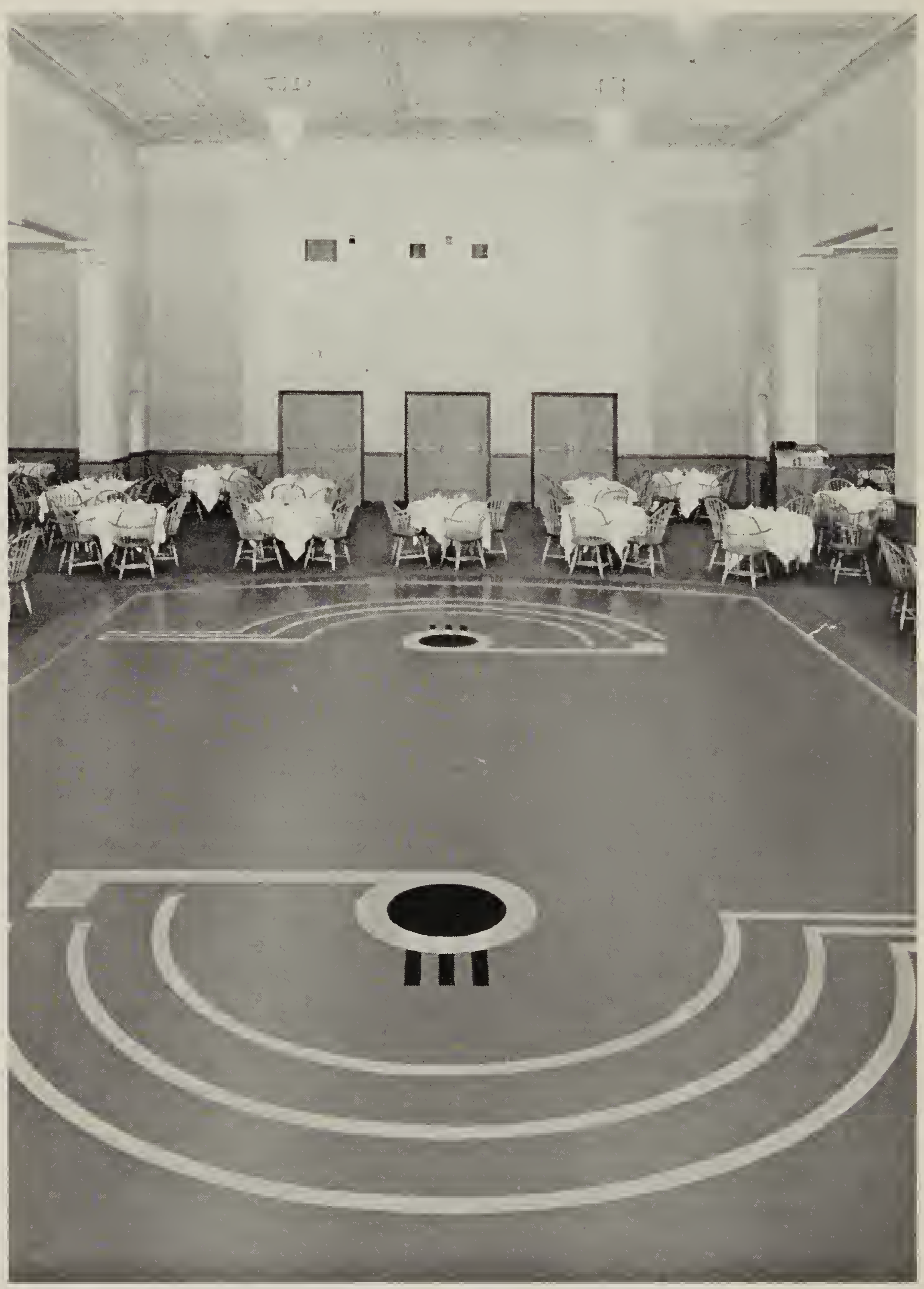
FIG. 17—*Individual dolly trucks for moving furniture often make it possible for mechanics to save much effort.*

When linoleum is unrolled on the floor, it is face down. To turn it over without scratching the surface, start at one end and fold the material over so that one end is over the other end at the edge of the wall. This leaves a loop in the center of the room. Starting at this loop, roll the double strip toward the two ends. As you approach the wall, the bottom end will pop out, and the goods then can be slid over to the opposite wall, face up.

Dollies and Trucks

The work of linoleum laying can be greatly simplified by the use of dollies and trucks for handling the material. Some of these trucks are for use on the job; while others are for use in the linoleum department.

Individual dolly trucks for moving refrigerators, bathtubs, desks, etc., Fig. 17, are placed under each leg and often enable one or two men to handle a job that would require several.



The Western Furniture Exchange and Merchandise Mart Club Restaurant, San Francisco, emphasizes an effect of movement and streamlining in this modern design.

CHAPTER FIVE

Laying the Lining Felt

The use of Armstrong's Lining Felt is absolutely essential on all wood or Temwood subfloors.

The use of lining felt is desirable, but optional, on subfloors of suspended concrete, metal, marble, ceramic tile, or terrazzo because it makes the linoleum floor quieter, more comfortable, and more resilient. The lining felt method also makes the linoleum easier to remove, if necessary.

CUTTING FELT—All lining felt should be cut with large shears or a straight knife, to fit the walls, built-in furniture, water pipes, etc., accurately, neatly, and with a minimum of seams. Accurate cutting prevents bumps or hollows under the linoleum.

The felt should be cut so that its length runs *across* the floor boards, Figs. 9, 10, and 12. Seams in the felt should be

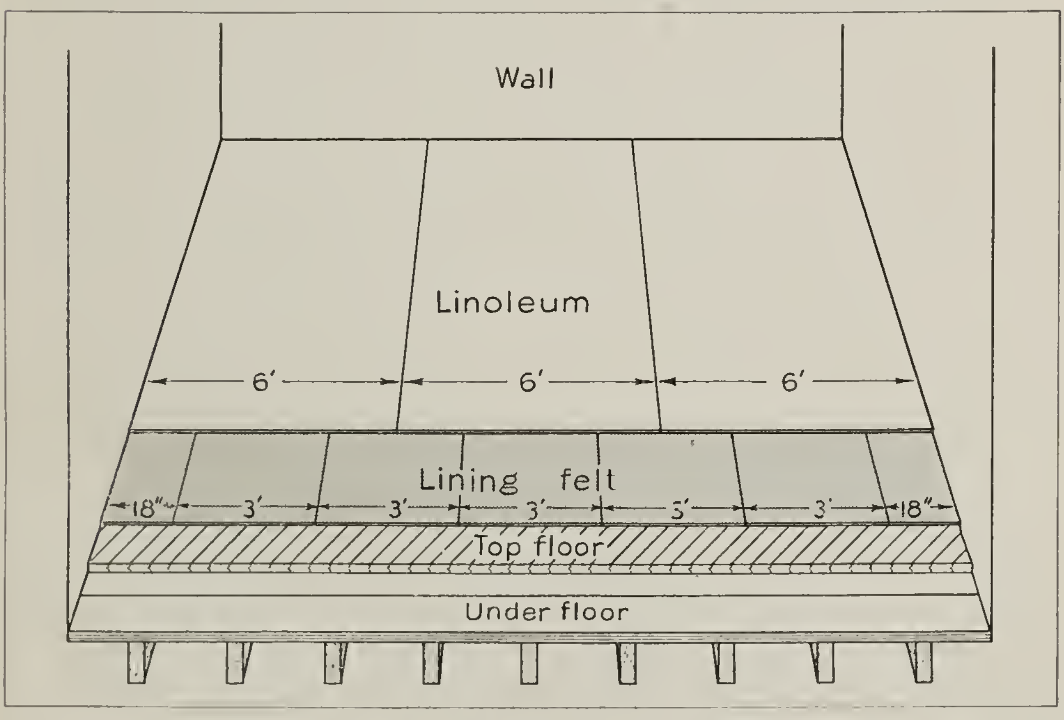


FIG. 18—*If the room is of such a width that only full-width strips of lining felt are required, the first strip laid should be 18" wide. This will prevent the seams of the linoleum from falling directly over every second seam in the lining felt.*

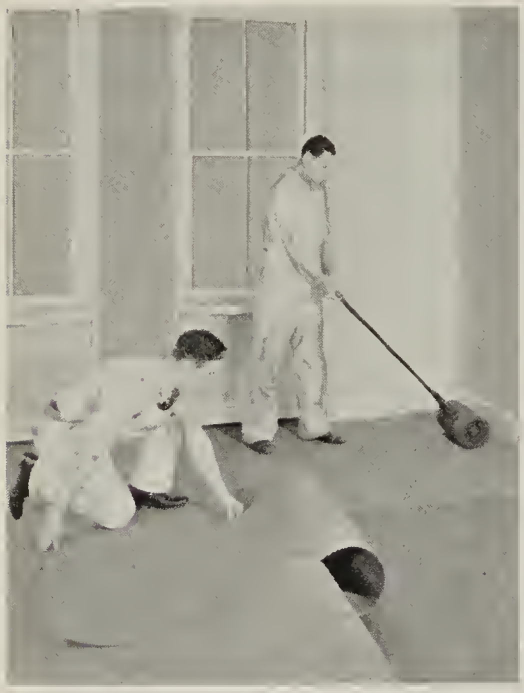


FIG. 19—*Before installing felt, spread Armstrong's Linoleum Paste. Then roll to produce firm adhesion.*

butted and made tight—never overlapped, because the laps will show through as ridges in the finished linoleum floor.

Do not try to use up odd pieces of felt by piecing them together. The felt should form a perfectly smooth foundation, with a minimum of seams.

Staggering Seams

If the room is exactly 9 ft. or 12 ft. wide, or of a width to take only full width (36″) strips of felt, the first strip of felt laid should be only 18″ wide, as shown in Fig. 18. This strip can be formed by splitting a 36″ width. By starting with a narrow piece, you will prevent the seams in the linoleum from falling directly over every second seam in the felt.

Usually, it will be possible to cut and fit all the pieces at once. As each is cut, turn it upside down to take out the curl and make it hug the floor.

When the pieces of felt have been cut and laid in place, turn back one end of all pieces about half way and sweep the floor. Paste will not stick securely to a floor that is dusty.

Spreading Paste

Close to this fold-back, pour some Armstrong's Linoleum Paste, which should never be diluted with water. Spread it thin and even with a rubber saw-edged paste spreader—not with a brush, unnotched spreader, or scrap of linoleum.

The ridges left by the saw-edged spreader help the layer to judge the thickness of the paste. They also form a vacuum when the lining felt or linoleum is pressed into the paste. This vacuum helps to hold the felt or linoleum more firmly—just as trowel marks in mortar make a better bond between bricks.

Uniform spreading is important because an unpasted spot makes a blister, which will cause trouble. The paste can be spread ahead about 36 sq. ft., so long as scum is not allowed to form.

Linoleum paste should be kept covered when not in use, to prevent loss of adhesiveness. Excess paste can be removed from the surface with a damp cloth.

Replace and smooth down the turned-back felt as quickly as possible. Roll the felt thoroughly with a linoleum roller. Then turn back the other half of the felt, Fig. 19, and repeat the steps above. Roll the whole strip of felt to produce good adhesion.

Protecting Felt

After the lining felt has been laid, it should be carefully protected from scuffing. If it is scuffed, small balls of felt will gather on the surface. These should always be brushed off the felt when paste is being applied to the felt for laying the linoleum. Otherwise, they will show through the linoleum as uneven places or possibly cause the formation of air pockets under the linoleum. Air pockets are the enemy of good laying because they prevent the linoleum from bonding firmly to the felt.

If paste is spilled on the surface of the felt, it should be scooped up and thrown away. It should not be put back into the container because the paste may have picked up dirt or small balls of scuffed felt. Later, this foreign matter in the paste will cause a rough, poorly bonded linoleum laying job. By placing a piece of waste felt under all paste and cement containers, the mechanic can protect the surface of the lining felt from spilled paste.

Adjoining Rooms

When the floor boards in one room do not run in the same direction as the boards in the other room, Fig. 20, the point where the boards meet in the doorway should be covered with a strip of Armstrong's Fabric Seam Protector (4″ wide). At least 1½″ of this strip should be tacked to the floor on one side of the line, leaving a 2½″ flap that extends beyond the joint into the other room. This flap is left loose and should not be tacked or pasted down. The felt is pasted over this strip, which prevents the seasonal expansion and contraction of the floor boards from splitting the felt and cracking the linoleum.

When the subfloor in one room is higher than the subfloor in the adjoining room, it is necessary to build up the linoleum at the doorway. This can be done by

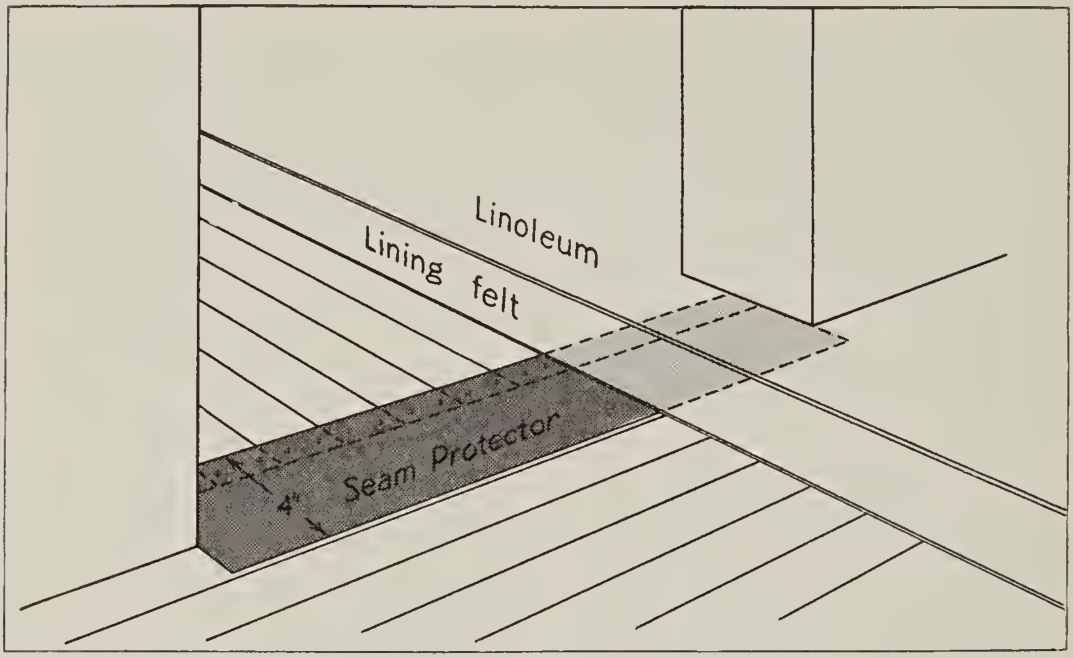


Fig. 20—*Where floor boards run in opposite directions, install a strip of Armstrong's Fabric Seam Protector 4" wide at the door line. Tack 1½" of this on one side of the line, leaving a 2½" flap extending beyond the joint into the other room.*

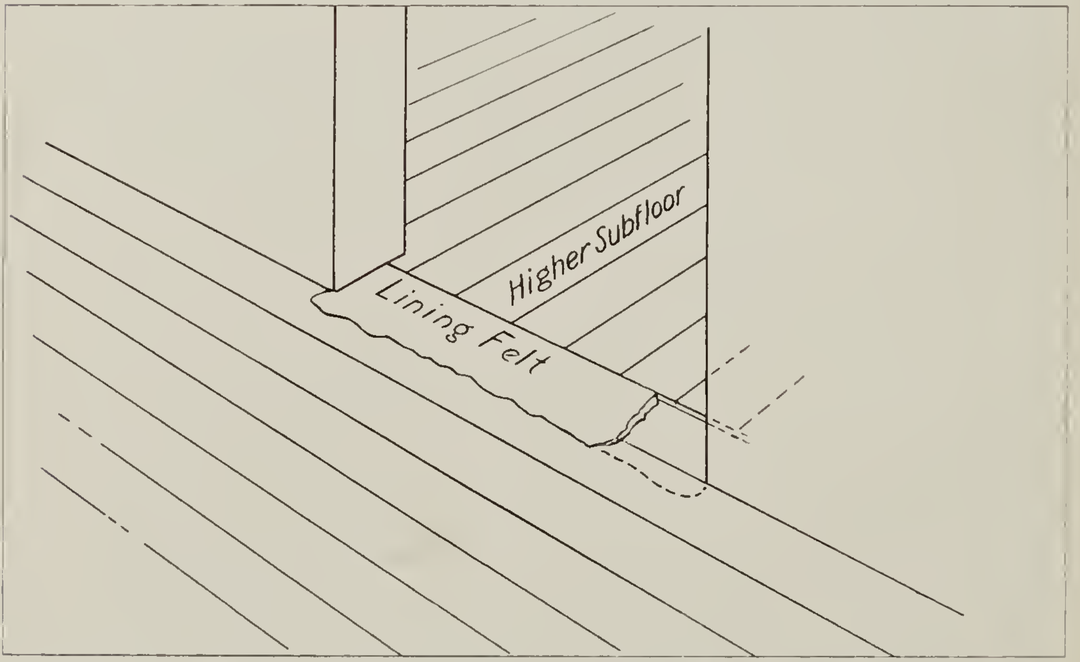


Fig. 21—*To adjust the height of adjacent subfloors at varying levels, butt a piece of felt 6" wide against the doorway. Spread 4" of paste on the subfloor and cover with the felt, leaving 2" unpasted. Then tear to make a beveled surface.*

using a strip of lining felt 6″ wide and long enough to cover the doorway section. The long side of this piece of felt is butted against the boards of the higher subfloor, as shown in Fig. 21. A section 4″ wide on the lower subfloor is spread with paste, and the strip of felt is laid in it. This leaves 2″ unpasted.

When the paste has thoroughly set under the 4″ pasted section, grip the loose unpasted edge of the felt and tear it with a slow movement, pulling slightly toward the paste side. This splits the felt and produces a beveled effect. This method tapers the felt more gradually than sanding or attempting to split the felt without first having pasted it.

The same method may be used where the gauge of the linoleum in one room is thinner than the gauge of the linoleum in the other room. Armstrong's Beveled Edging may be installed at the edge to join linoleum to a wood floor, as shown in Fig. 22.

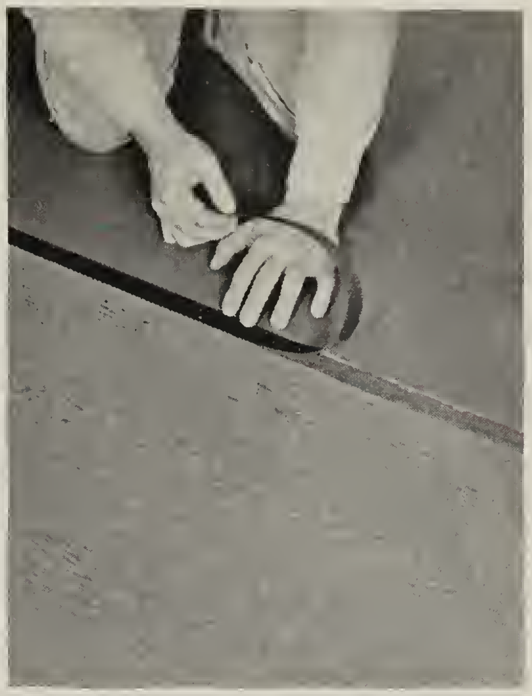
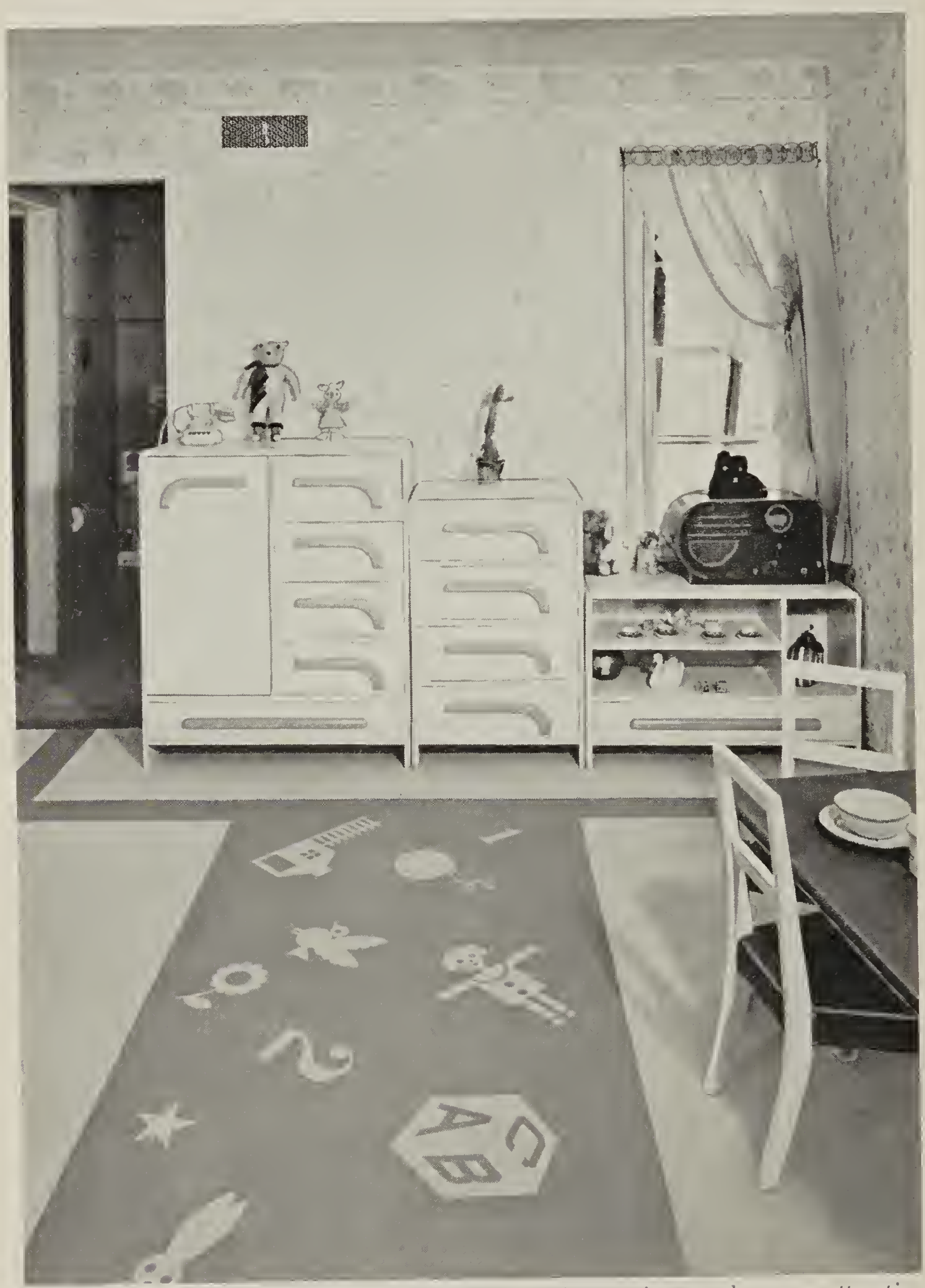


Fig. 22—*If linoleum and a wood floor meet at the juncture of two rooms, Armstrong's Beveled Edging may be used.*



Insets in nursery floors may frequently be as instructive as they are attractive. The installation above features elementary numbers and objects, as well as letters.

CHAPTER SIX

Laying Linoleum Wall-to-Wall

This chapter describes the method of making the simplest type of installation, which is Plain linoleum laid wall-to-wall, without borders or Linostrips.

The same general method is also used with grained or patterned materials. With these materials, however, the strips must be matched and the seams cut as described in Chapter VII.

Depending upon whether the linoleum is backed material (painted on the burlap side) or unbacked, the method of installation varies slightly. In either case, however, linoleum on wood subfloors should be laid so that the seams do not fall directly over seams of the lining felt; but the seams in the linoleum and felt should run in the same direction. The seams in the linoleum and lining felt should also run across the floor boards, as shown in Figs. 9, 10, and 12.

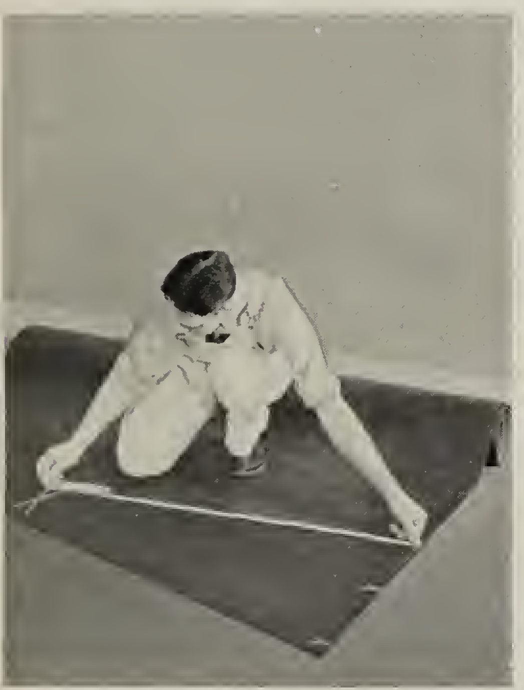


FIG. 23—*For a simple installation, where linoleum is laid wall to wall, first square one end of the goods.*

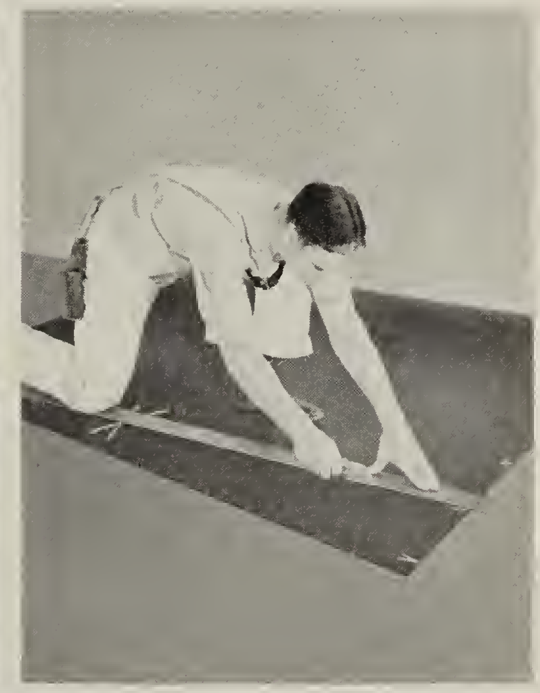


FIG. 24—*Cut along the squared end with a straightedge and repeat this process at the other end of the strip.*

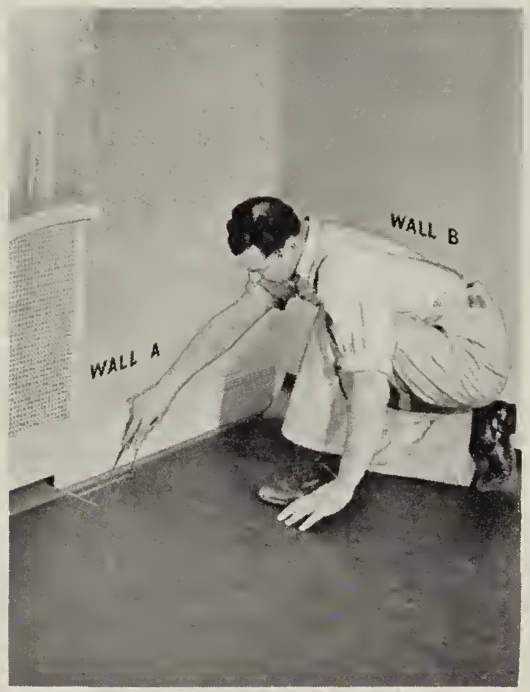


Fig. 25—*Using dividers, scribe and cut the linoleum strip so that the long dimension will fit closely to Wall A.*

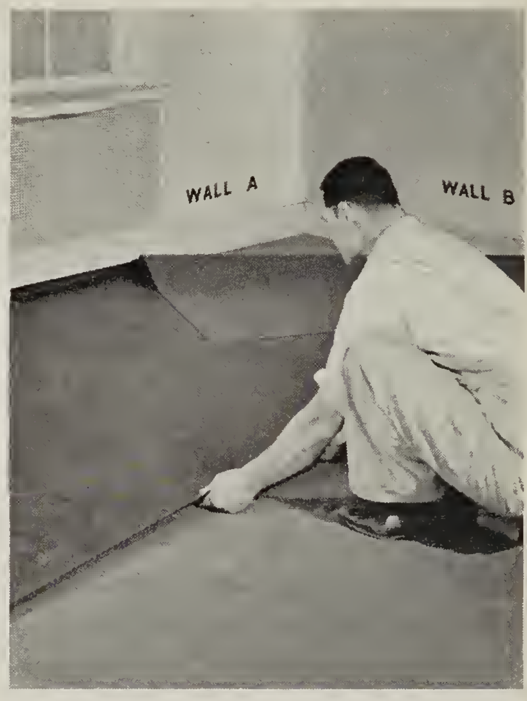


Fig. 26—*Push the piece of linoleum into position along Wall A, leaving the ends to run up the end walls, slightly.*

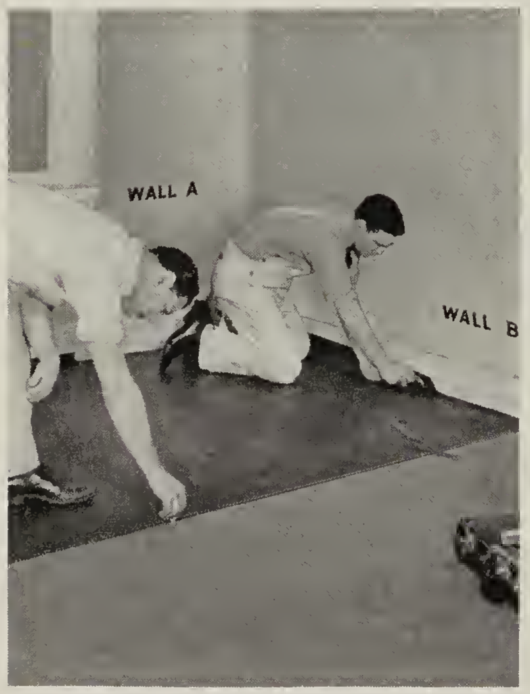


Fig. 27—*Draw a chalk line on the felt along the length of the linoleum. Cut the ends of the strips to fit B and C.*

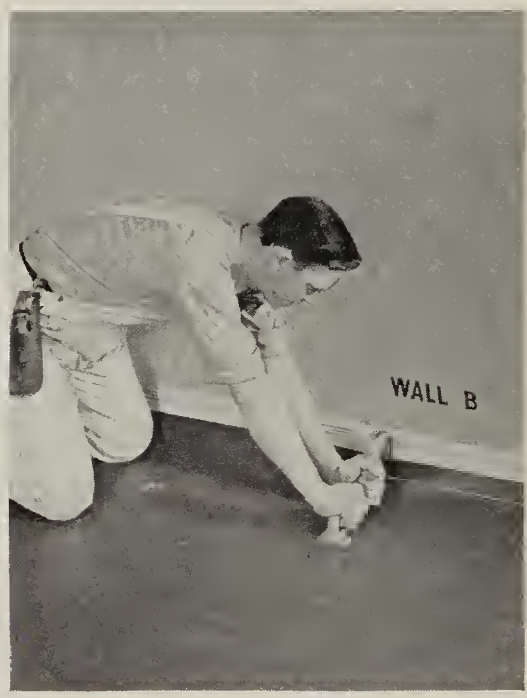


Fig. 28—*A different method of fitting linoleum to Walls B and C involves use of Armstrong's Baseboard Scriber.*

Fitting the First Strip

1. Square the end of a piece of linoleum as shown in Fig. 23; and cut the linoleum along the squared end as shown in Fig. 24. The other end of the piece should be cut from the roll and squared in the same way, because squaring the edges prevents waste when the piece is fitted against the end walls. The piece should be cut slightly longer than the longest side of the room.

2. Place the piece in position against the long wall, allowing the ends to flash up the end walls.

3. With a pair of dividers, scribe and cut this piece so that its long dimension will fit closely against Wall A, as shown in Fig. 25. (Chapter X explains the various methods of scribing.) Then push the piece into position along the Wall A, as shown in Fig. 26. This will leave the two ends of the piece to run up the end walls a short distance, as shown in Fig. 27.

4. When the piece has been fitted closely against Wall A, draw a chalk line on the felt along the long side of the linoleum. See Fig. 27.

5. Force the ends that run up Walls B and C tightly into the corners made by the floor and wall. (*C* is the wall opposite *B*.) Then, by cutting off small amounts at a time with a linoleum knife, cut the ends of the piece to fit tightly against Walls B and C, as shown in Fig. 27. (Another method of fitting the linoleum to Walls B and C is to use Armstrong's Baseboard Scriber, as shown in Fig. 28.)

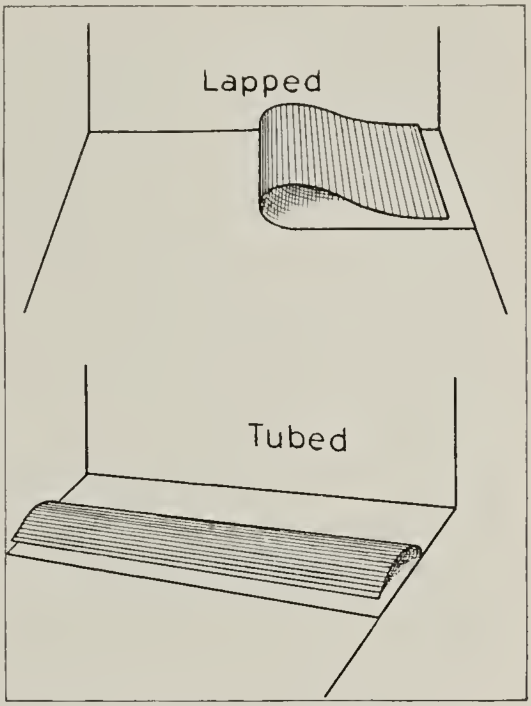


Fig. 29—*There are two methods of folding back linoleum for pasting—lapping and tubing—as shown above.*

6. Lap the end that has been fitted to Wall B back on itself for half its length. (The two methods of folding back linoleum—lapping and tubing—are illustrated in Fig. 29.)

7. Before spreading paste, however, sweep the lining felt

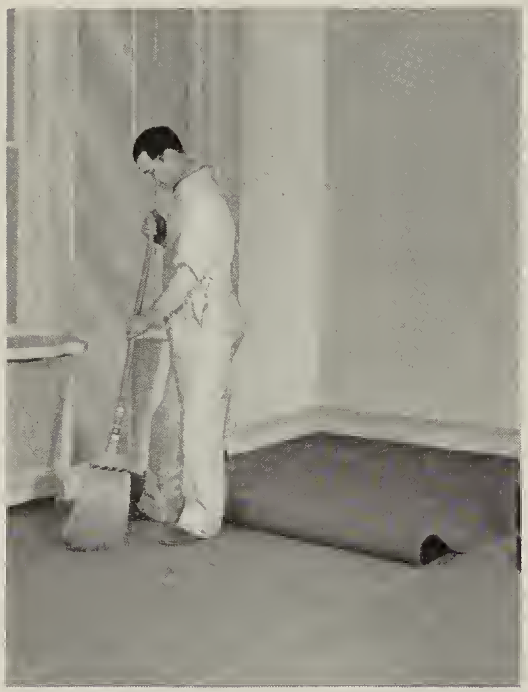


Fig. 30—*Before spreading the paste, sweep the lining felt clean and remove all debris to assure firm adhesion.*

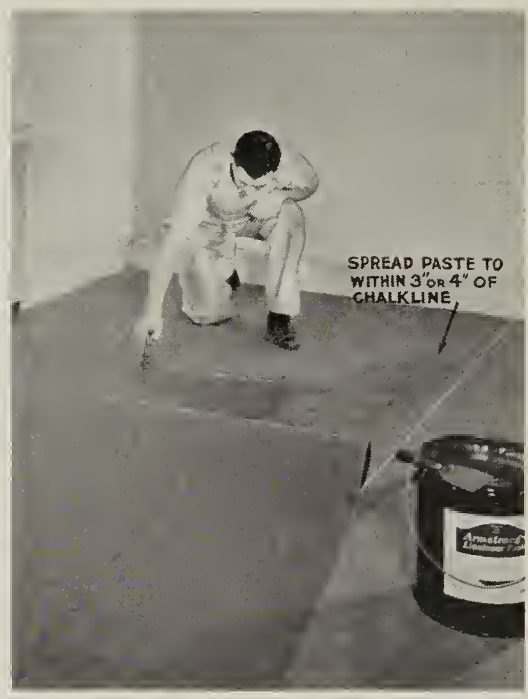

SPREAD PASTE TO WITHIN 3" OR 4" OF CHALKLINE

Fig. 31—*Spread linoleum paste with a saw-toothed rubber-edged spreader from Wall A to within 4" of chalk line.*

clean, as shown in Fig. 30, and remove litter and debris.

8. With a saw-toothed rubber-edged paste spreader, spread linoleum paste on the exposed part of the lining felt, spreading it from wall A to within 4" of the chalk line, Fig. 31. Spread the paste from the fold in the strip all the way down to Wall B.

Note—If the linoleum is being laid in a room where water is likely to be spilled, or if the floor slopes slightly, so that water would run to the edges of the linoleum during washing, the seams and edges should be sealed with Armstrong's No. 236 Waterproof or No. 210 Rustproof Cement instead of paste.

Waterproof or rustproof cement should be spread thin with a notched steel trowel. Keep drums closed when not in use.

The waterproof cement, which should be thoroughly stirred, is quick-setting and takes hold while the linoleum is being laid. The rustproof cement, however, should be allowed to set for 15 minutes before the linoleum is laid. The linoleum then should be thoroughly rolled.

Where seams or edges are sealed with waterproof or rustproof cement, the main body of the linoleum should be pasted down with linoleum paste. Waterproof or rustproof cement is not necessary where the floor is not likely to be exposed to considerable spilled water.

Before it sets or dries, excess waterproof cement may be removed from the surface of the goods with fine steel wool and Armstrong's Floor Cleaner, or with a cloth dampened with the cleaner. Excess rustproof cement may be removed with a cloth dampened with kerosene or gasoline.

9. Replace the linoleum that has been lapped back; and roll it with a linoleum roller, Fig. 32, so that it makes a firm bond with the paste. Roll only to within 4″ of the start of the paste line at the center. This is done to prevent splitting of the felt when the other half of the linoleum is lapped back for pasting.

10. Repeat the lapping and spreading operations as described in Steps 6, 7, and 8, with the other half of the piece which fits Wall C. Where the second spreading of paste meets the first, do not let it overlap the first. Otherwise a paste ridge will show through the linoleum.

11. Replace the linoleum that has been turned back from Wall C; and roll it with a linoleum roller. Make sure to roll not only the section just laid, but also the 4″ section that was not rolled when the first half was laid.

Fitting the Second and Following Strips

The second and all following strips of linoleum are laid in the same way, except that each new piece has to be fitted against the preceding piece that has already been pasted down. The method is as follows:

1. Fit the second piece to Walls B and C as described in Step No. 5 preceding.

2. Lap the long side of the second piece over the unpasted

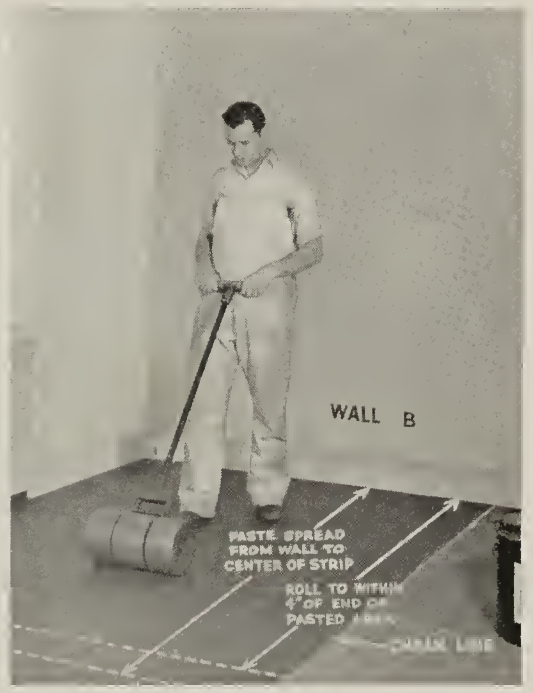

WALL B
PASTE SPREAD FROM WALL TO CENTER OF STRIP
ROLL TO WITHIN 4″ OF END OF PASTED AREA
CHALK LINE

Fig. 32—*After replacing the linoleum that has been lapped back, roll it firmly into the paste with a roller.*

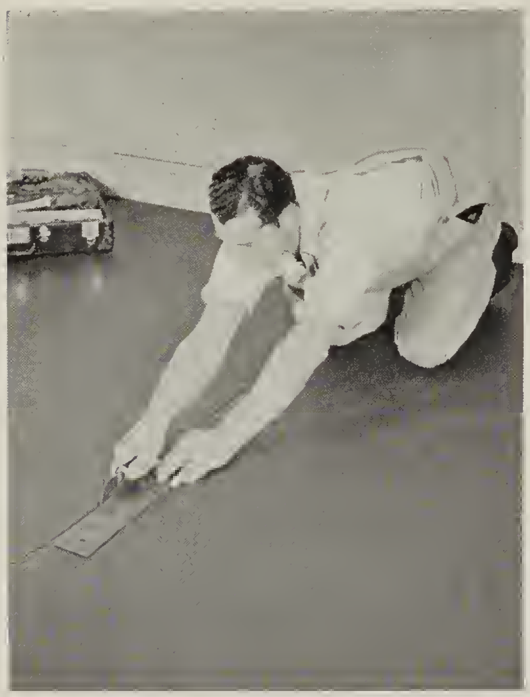


Fig. 33—*In a lapped joint, strike a chalk line at the center of the overlap. Cut through to score the under piece.*

edge of the first piece. The overlap should be about ¾″.

3. When the second piece has been lapped over the first, draw a pencil line on the felt or subfloor along the free, long edge of the second piece. (This line will show whether the second piece has slipped during the cutting. It will also serve as a guide in spreading paste, the paste being spread to within 4″ of it.) Then before pasting the second piece, cut the seam as follows:

4. To cut an accurate seam, strike a chalk line along the midpoint (⅜″) of the ¾″ overlap, as shown in Fig. 33. Lay the straightedge along this chalk line. Using the straightedge as a guide, Fig. 33, cut through the entire length and the full thickness of the top piece with a linoleum knife. Cut deep enough into the under piece to leave a score mark as a guide.

5. The bottom piece is then cut along this scored line. After the selvage has been cut off, the seam is then checked for fit with the other piece.

6. In all gauges of linoleum except Standard, the seam may also be cut with Armstrong's Seam Cutter, which saves time and produces more accurate seams than can be cut by hand.

How to Use the Seam Cutter

The seam-cutting tool is best operated by two men as follows:

1. First, lap the second piece of linoleum about ¾″ over the first piece.

2. Then insert the linoleum knife in the slot in the cutter, Fig. 34. The point of the knife blade should project below the face of the tool just far enough to cut well into (but not through) the under piece. This adjustment is made with the upper thumbscrew. The side thumbscrew is then tightened to hold the knife blade securely in the tool at the proper adjustment for cutting.

3. The tool is then placed on the linoleum, with the guide flange against the edge of the overlapping piece.

4. With a 3′ or 4′ piece of rope tied to the knob on the front end of the tool, Fig. 35, a helper pulls the tool along the seam. The pull should be slightly to the side opposite the guide flange and as close to the floor as possible, as shown in Fig. 35.

5. To insure a steadier pull on the cutter and ease of operation, the rope may be tied to a linoleum roller, which is pulled by the helper as shown in Fig. 36.

6. As the helper pulls the roller along, the operator holds the tool firmly against the overlap, bearing down on it slightly so that the knife is kept perpendicular at all times, and so that a clean cut is made through the overlap and part way through the underlap. Afterward, the underlap is cut the rest of the way through with a knife, using the scored line as a guide.

7. The several inches next to the wall at the ends of each seam, which cannot be reached with the tool, should be trimmed with a knife. A straightedge is

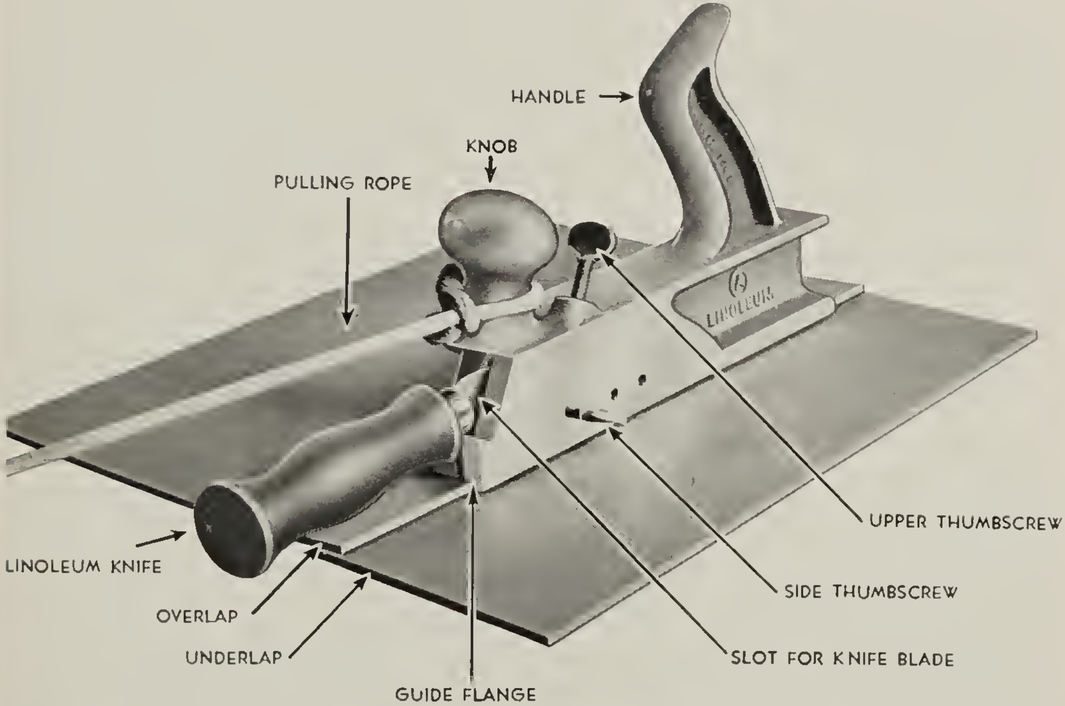


FIG. 34—*To operate the seam-cutting tool, insert the linoleum knife in the slot, the point projecting below the face of the tool just far enough to cut well into the under piece. Adjust with upper thumbscrew and tighten with side thumbscrew.*

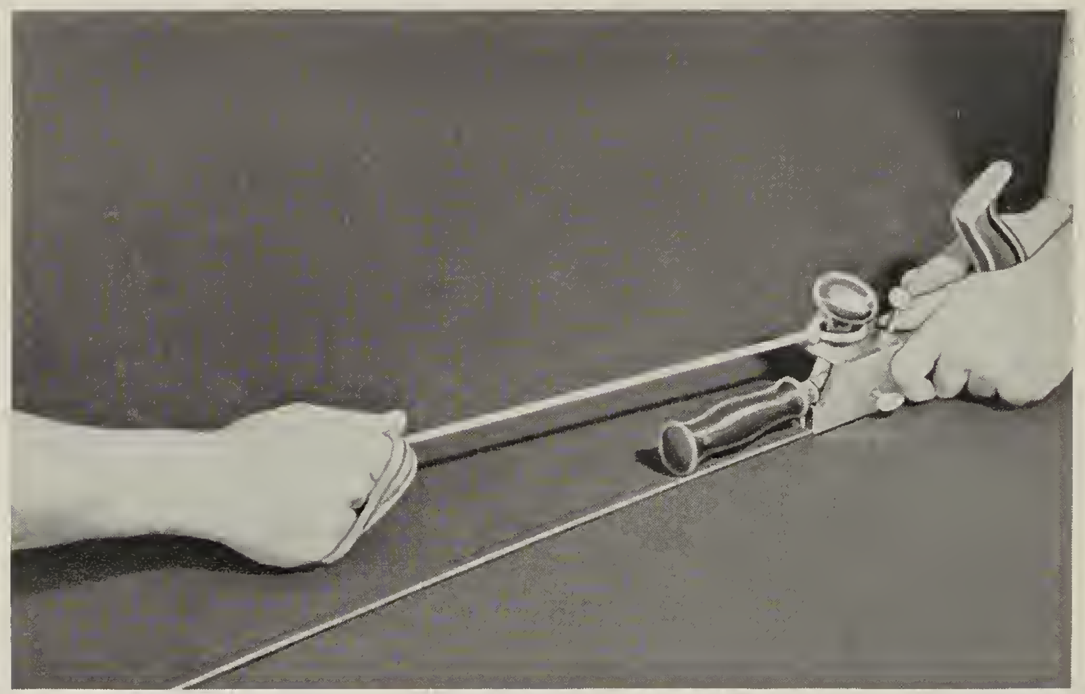


FIG. 35—*With a 3′ or 4′ piece of rope tied securely to the knob on the front end of the seam cutter, a helper pulls the tool along the seam. The pull should be slightly to the side opposite the guide flange and as near the floor as possible.*

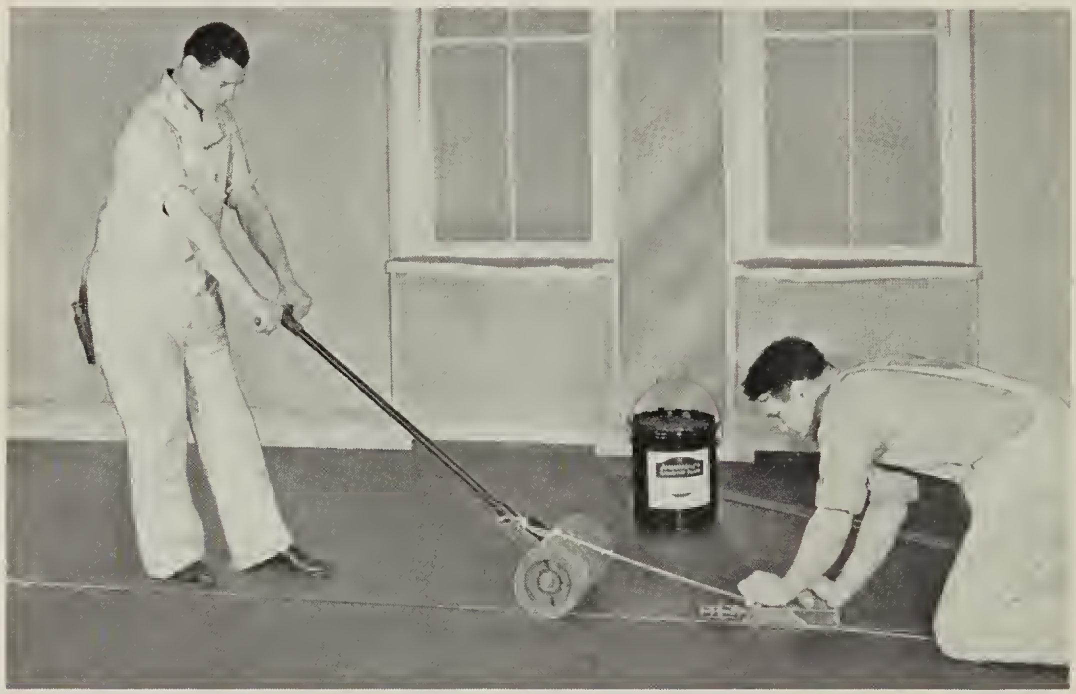


FIG. 36—*If a steadier pull on the cutter is desired with still further ease of operation, the rope may be tied to a linoleum roller. This may then be pulled as illustrated above. This method has been found highly satisfactory by many mechanics.*

laid along the overlap, and the cut already made by the tool is continued to the ends with the linoleum knife. The knife must always be held steady and exactly perpendicular. Before using a new knife in the tool, the slender point should be ground down slightly. A knife ordinarily considered worn out for hand cutting can be used satisfactorily in the seam-cutting tool.

After the seam has been cut, the new piece is lapped back, and the felt or floor is spread with paste as described on Page 46. While this piece is lapped back, spread paste with a spatula or wide putty knife along the unpasted 4″ edge of the first piece, as shown in Fig. 37.

After both halves of the piece have been pasted and rolled as described on Page 46, wet the linoleum with a damp cloth along the seam. Then "iron" the seam by rubbing with a hammer head, as shown in Fig. 38.

Each completed seam should be sandbagged over its whole length until the paste or cement has thoroughly set.

The above method of fitting pieces and cutting seams is repeated with each piece until the opposite wall is reached. If this wall is irregular, or if the width

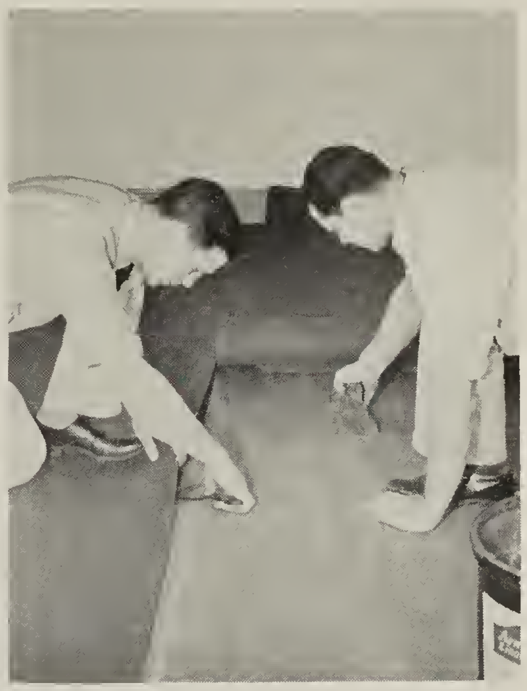


Fig. 37—*With the new piece lapped back, spread paste with a spatula along the unpasted edge of the first piece.*

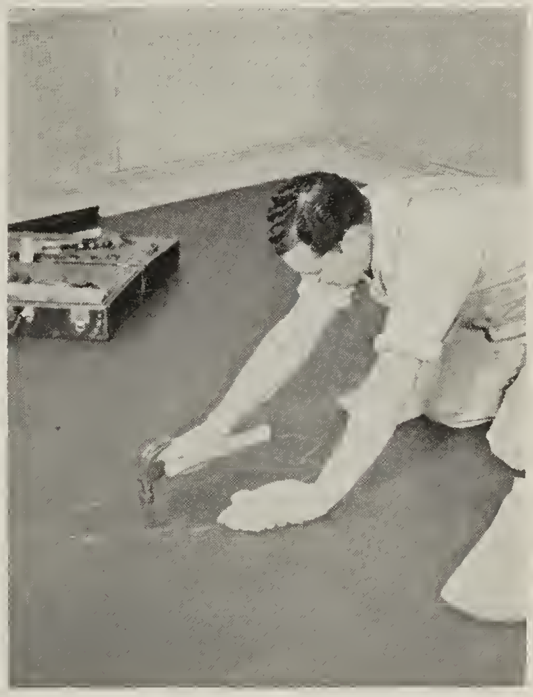


Fig. 38—*After pasting and rolling the seam, wet it with a cloth. Then "iron" it smooth with a hammer head.*

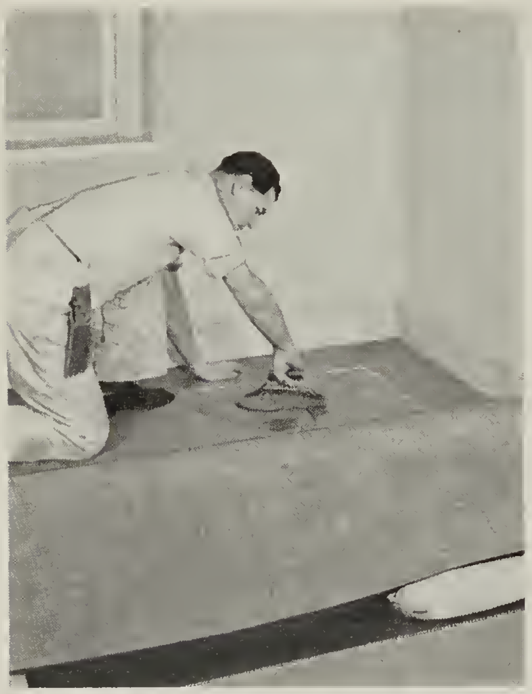


Fig. 39—*With unbacked linoleum, the strip is tubed. Paste is spread from the center of the strip to the wall.*

of the last section of floor to be covered is less than the full width of a piece of linoleum, the linoleum should be carefully scribed to fit this wall neatly. *In scribing, be sure to leave enough material for cutting a seam.*

Unbacked Material

In the method just described, each strip of linoleum was lapped back on itself, across its width, before spreading paste. Unbacked linoleum should not be lapped back from the ends because lapping tends to shrink it and cause poor fit.* Instead, the "tubing" method is used with unbacked material, as follows:

1. After installing the lining felt, scribe and cut the first piece of field linoleum to fit the long wall of the room, as shown in Figs. 25 to 27. Also cut or scribe it neatly to fit Walls B and C, but do not paste it down.

2. Allowing sufficient overlap to make lapped seams (as described on Page 47), cut the second and succeeding pieces of field linoleum to fit neatly against each other and against Walls B and C. Do not paste any of these pieces to the felt. Simply fit and lay them unpasted on the felt in the positions they will occupy when pasted.

3. Then "tube" the first piece along its whole length, as shown in Fig. 39. "Tubing" means that the lengthwise half of the strip (in this case, the half that lies against Wall A) is folded back toward the center of the room, as shown in Fig. 29, Page 45.

4. With a saw-toothed rubber paste spreader, spread linoleum paste on the felt from the center of the strip up to the wall, as shown in Fig. 39.

5. Replace the tubed-back section of linoleum in the paste, butting it neatly against Wall A.

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*Where the shape of the room makes it impossible to tube the unbacked linoleum, the lapping method must be used, but the strips are not cut to an exact fit with Walls B and C until after they have been pasted to the felt.

With a linoleum roller, roll the pasted area to within 4″ of the start of the paste line at the center of the strip. This is done to prevent splitting of the felt when the other half of the piece is tubed in the same way.

6. Now tube back the other half of the first piece, as shown in Fig. 40, below.

7. Draw a chalk line on the felt along the lengthwise edge of the second piece. Then tube back the first half of the second piece, as in Fig. 41. This chalk line indicates where to lay Armstrong's Seam Protector. Seam protector is used here because, in this particular room, it was impossible to lay the linoleum with its seams running across the floor boards. Therefore, the seam protector is pasted to the felt under each seam in the linoleum.

8. When the seam protector has been pasted in place, spread paste over it, and over the felt between the two tubed-back sections of linoleum, as shown in Fig. 41. Where this spreading of paste meets the first spreading, be careful that it does not overlap. Otherwise, a paste ridge will show through the linoleum.

9. Replace the two tubed-back sections in the paste, and

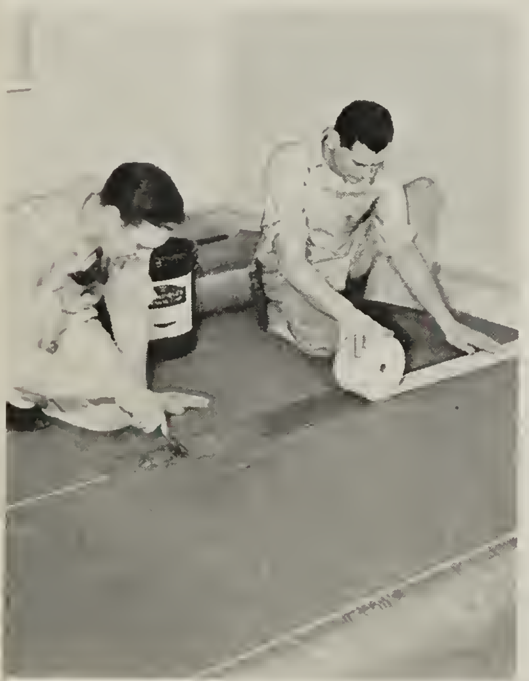


FIG. 40—*In rooms where the linoleum does not run across the floor boards, Armstrong's Seam Protector is used.*

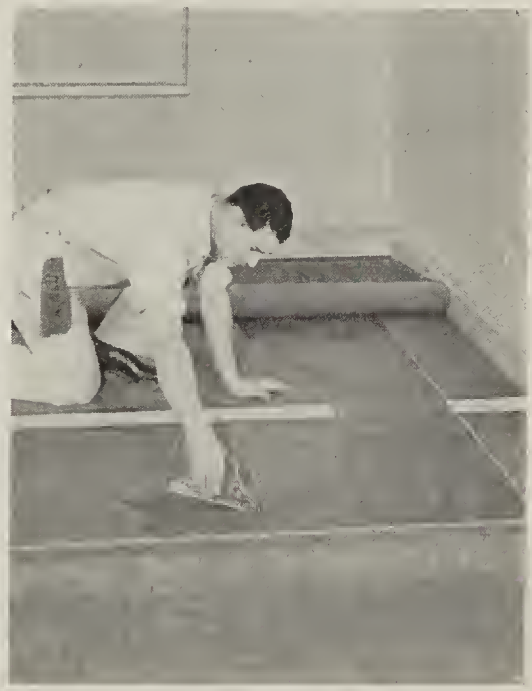


FIG. 41—*When the Seam Protector is pasted in place, spread paste over it and between the tubed-back strips.*

check for a tight-fitting seam. Then roll with a linoleum roller. When rolling the second piece, roll only to within 4″ of the paste line at the center, as explained in No. 5, above.

10. If only two widths of linoleum are needed to cover the room, tube back the second half of the second piece, spread paste to the wall, and roll as described in Nos. 4, 5, and 6 above. If this wall is irregular, the linoleum should be scribed to fit neatly. In scribing, allow enough material for cutting the seam.

11. If more than two widths of linoleum are required to cover the room, tube back the second half of the second piece; draw the chalk line along the edge of the third piece, tube back the first half of the third piece; install the seam protector; spread paste; and roll—as described in Steps Nos. 6, 7, 8, and 9 above. Repeat these steps with each of the pieces. Install the last half of the last piece as described in Step No. 10 above. If the wall is irregular, or if the width of the last section of floor to be covered is less than the full width of a piece of linoleum, scribe the piece accurately so that it makes a neat fit at the wall line.

12. Roll the linoleum thoroughly with a linoleum roller; then "iron" the seams, Fig. 38.

13. Weight down the seams with sandbags until the paste has thoroughly set.

Other Types of Linoleum

Either of the above methods of laying may be used with Marbelle, Monobelle, Jaspé, or patterned linoleum, depending upon whether the material is backed or unbacked.

However, it will not always be possible to make full-lapped seams in patterned linoleum, although they may always be used with Plain, Jaspé, Marbelle, and Monobelle. Depending upon the pattern, it may be necessary to make squared - and - lapped or butted seams instead. The conditions governing the type of seam to use are given on Page 59 of the next chapter.

With Jaspé, Marbelle, and Monobelle, a slight amount of matching between strips is required. With patterned materials, careful matching is essential. The methods of matching are described in the next chapter.

CHAPTER SEVEN

Matching and Types of Seams

1. Matching Strips of Linoleum

Strips of Plain linoleum require no matching; but in laying Jaspé, Monobelle, and Marbelle, special care is necessary. (The general method of installing these materials, however, is the same as that described for Plain linoleum in Chapter VI.)

For example, if strips of Monobelle, Marbelle, or Jaspé are laid side by side, just as they are cut from the roll, the graining at the seams may produce a peaked or wedged effect—i. e., an optical illusion that makes the seams look as if they were raised above the floor, as illustrated in Fig. 42.

This can be corrected as follows: For example, in a room requiring five strips of linoleum, Pieces 1, 3, and 5 would be laid exactly as cut from the roll; but Pieces 2 and 4 would be turned end for end, so that the graining

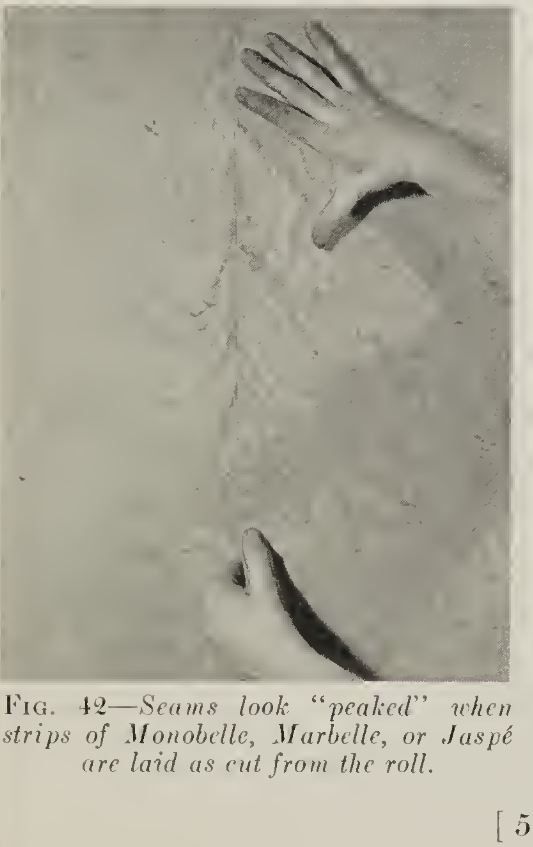


FIG. 42—*Seams look "peaked" when strips of Monobelle, Marbelle, or Jaspé are laid as cut from the roll.*

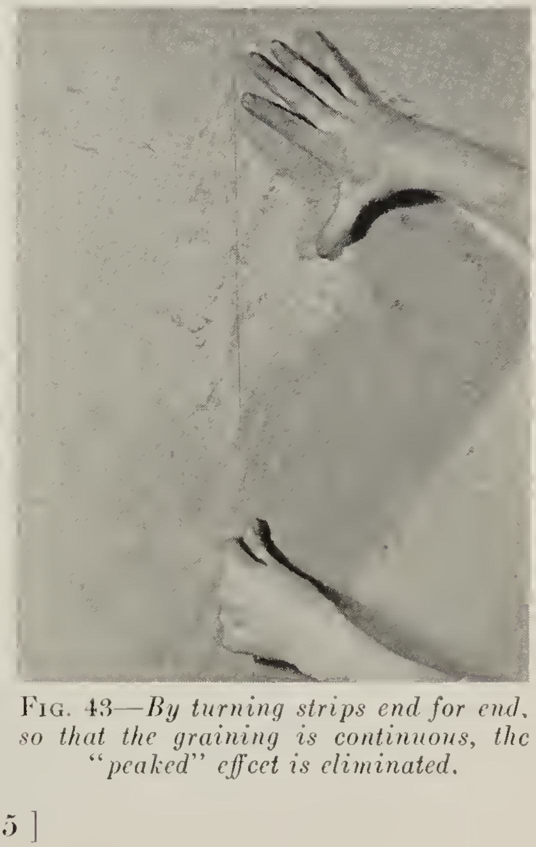


FIG. 43—*By turning strips end for end, so that the graining is continuous, the "peaked" effect is eliminated.*

would continue across the seam from one piece into the other.

The seams thus produced would look like Fig. 43.

Matching Patterned Materials

Patterned materials require still more care in matching, because the elements of the design recur at regular intervals. Depending upon the distance between identical design elements, the material is said to have a 6″ repeat, 18″ repeat, etc.

Not all patterns have the same repeat. The usual repeats are 6″, 9″, 12″, 18″, 24″, 27″, 36″, and 54″. The 18″ repeat is probably the most widely used. The 6″, 9″, and 12″ repeats occur usually in small block or tile effects.

In fitting strips of patterned materials next to each other, the repeat in one strip should be brought directly opposite the repeat in the other. Unless this is done, the effect of the finished floor will not be as pleasing.

For example, in Fig. 44, Strip No. 1 and Strip No. 2 are laid so that the repeats do not fall opposite each other. Note that the effect of the design is lost. In Fig. 45, where the repeats in the two pieces are directly opposite each other, note how the design "hangs together" as an artistic unit.

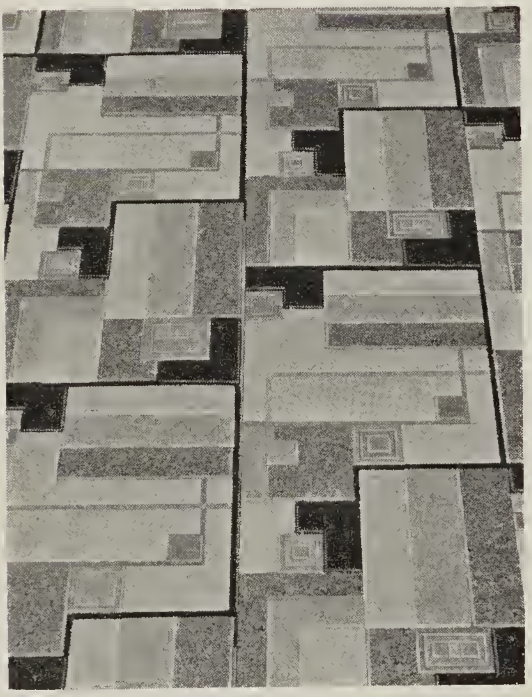


FIG. 44—*Pattern goods laid so that repeats do not fall opposite each other destroy the effect of the design.*

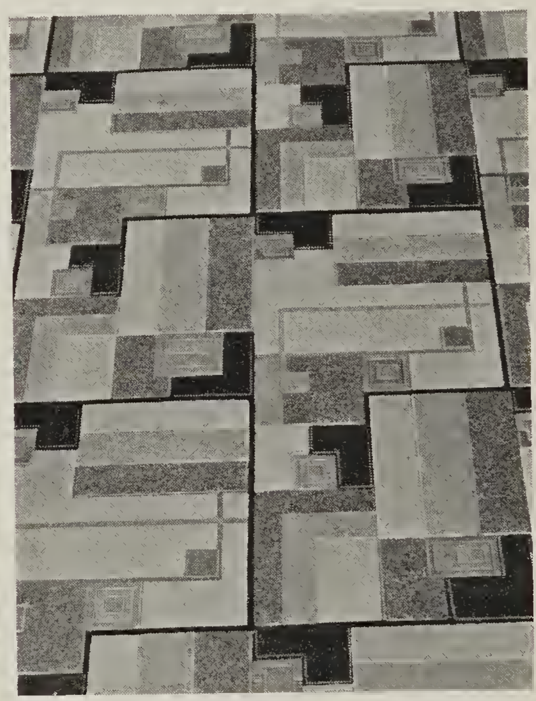


FIG. 45—*Where the repeats in the pattern are directly opposite each other, the design forms a single unit.*

Hints on Matching

Occasionally, the repeats in a strip cut from the beginning (or end) of a roll will not exactly match the repeats in a strip cut from the center. Due to the manufacturing process, the material at the ends of a roll sometimes stretches slightly more than the material at the center. Therefore—before cutting the second strip from the roll—lay the first strip alongside it to make certain that the repeats will match. If they do not, unroll the whole roll and cut the second strip from the inside end of the roll. The two strips will then match exactly.

If the pieces have been cut before the mismatching is discovered, allow the linoleum to become more pliable by keeping it in a warm room. Then take the piece that has stretched and roll it *face-in* on itself to shrink it. Take the other piece, which is "short," and roll it *face-out* on itself to stretch it. Material stretched or shrunk in this way should be tubed (i. e. turned back across its length) rather than lapped (i. e. turned back across its width) when paste is being spread on the felt.

If—after two or more pieces of linoleum have been installed with perfect match—the pattern of the next piece runs long at one end, (as shown in Fig. 46), the material can be made to match, even after the seam is cut, by the following method:

1. Fit and paste down the end of the piece that matches the adjoining piece.

2. At the point where the pattern lines start running long, turn back the piece, and spread paste on the felt, Fig. 47.

3. Then, before replacing the linoleum, place a thin strip of wood (such as a lath) across the pasted area, as shown in Fig. 47. The wood should be half way

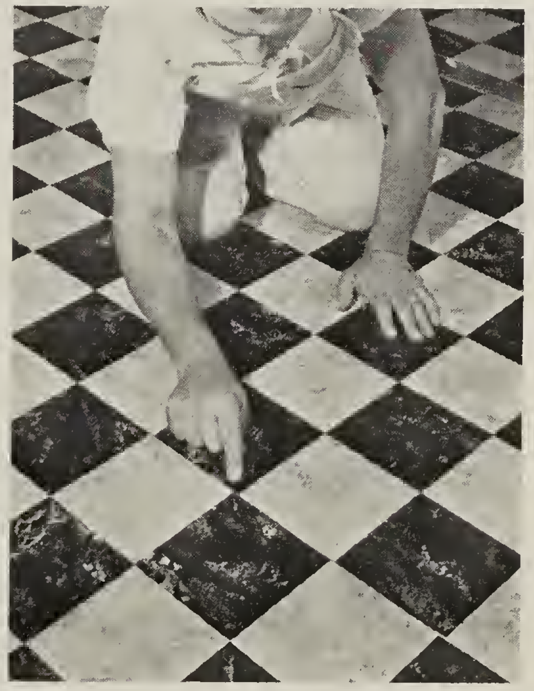


FIG. 46—*Although the pattern shown above runs long at one end, the linoleum strips can still be made to match.*

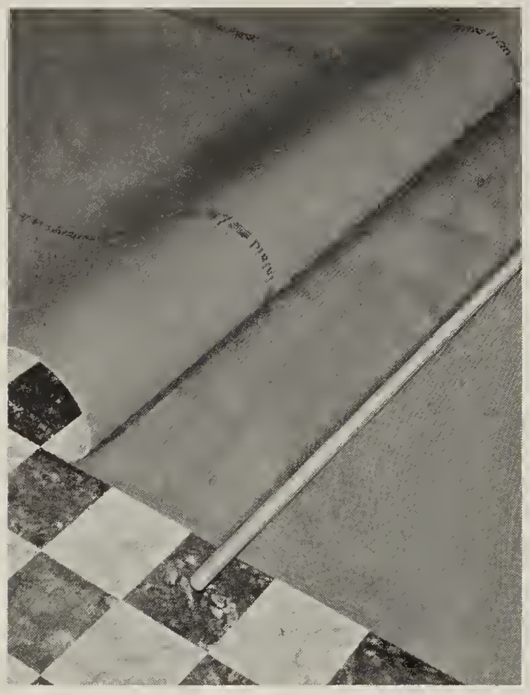


Fig. 47—*Where the pattern is long, spread paste on felt and put a strip of wood midway of the off-match section.*

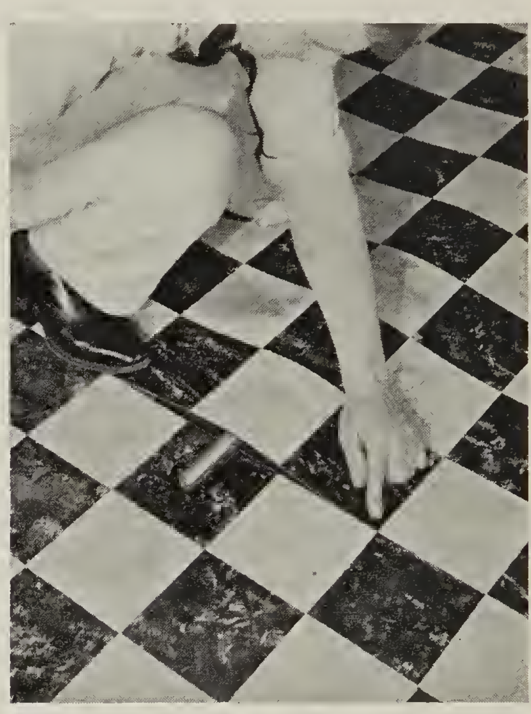


Fig. 48—*To pull the pattern back into alignment, lay the linoleum over the stick so that a buckle is formed.*

between the beginning and end of the off-match section.

4. Lay the linoleum over the stick, as shown in Fig. 48, so that a buckle is formed.

5. If this buckle does not pull the pattern back into alignment with the adjacent piece, form one or more similar buckles along the out-of-line section until alignment is obtained.

6. Then remove the stick and roll the material on each side of the buckle as in Fig. 49. Then roll slowly from one side of the buckle to the other, gradually pressing the buckle into the paste to make the proper bond. This compresses the linoleum enough to bring the pattern into perfect alignment with the pattern of the adjacent piece.

2. Types of Seams in Patterned Linoleum

Three types of seams are used with patterned linoleum:

1. *Full-Lapped Seams*, which are always used with Plain, Jaspé, Marbelle, and Monobelle linoleum, may also be used on patterned materials having large-sized blocks when there is enough selvage to allow the pieces to be cut without reducing the size of the blocks on either side of the seam. The method of making a full-lapped seam with a lino-

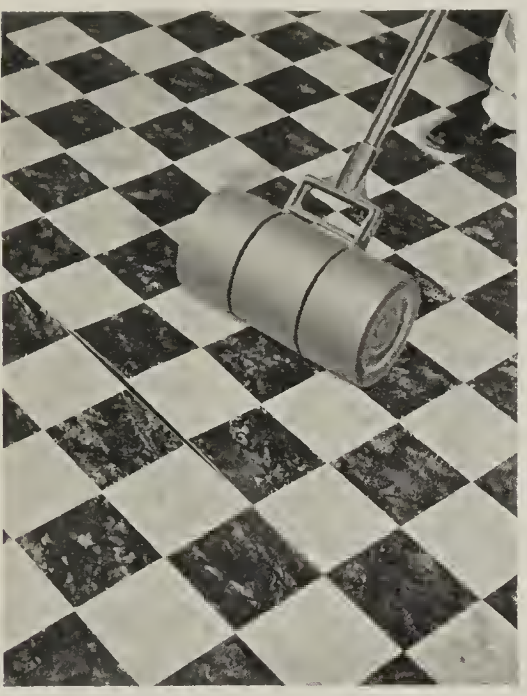


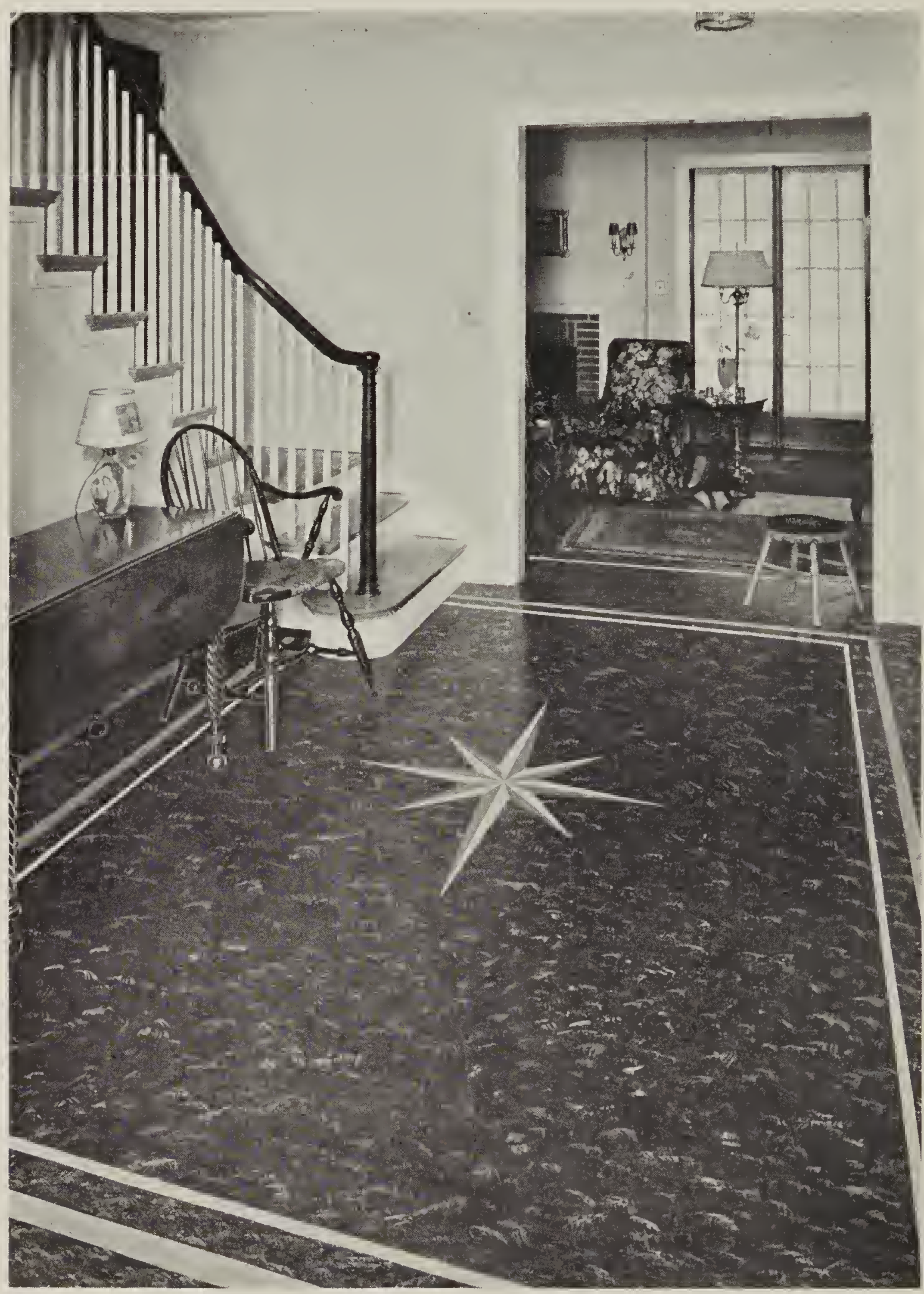
Fig. 49—*Remove the stick and run the roller from one side of the buckle to the other, to cause shrinkage.*

leum knife or seam cutter is described in Chapter VI.

2. *Squared-and-Lapped Seams:* If there is not enough selvage on large block designs, or if small-scale designs or interliner patterns are used, a squared-and-lapped seam should be employed.

To make this type of seam, square the edge of one piece by cutting it along a straightedge, or by taking off thin shavings with a block plane. Be careful not to trim off too much of the interliner or design. Then lap this squared edge over the edge of the adjoining piece. Holding a linoleum knife perpendicular and against this square edge, score the under piece for the entire length of the seam. Then trim the scored piece along the entire length of the scored line. Remove the scrap and butt the pieces to check fit.

3. *Butted Seams:* If the pattern is a parquetry, small block, or diagonal block design, butted seams are sometimes used and are made as follows: Butt the edges of the adjoining pieces against each other and note all points that protrude to prevent a perfect fit. With a block plane, plane down these protruding points on both pieces, until the pieces fit tightly against each other. Be careful not to plane off too much material. In small-scale designs, the thickness of a single shaving is often all that needs to be removed. During the planing, check the pieces frequently for tightness of fit.



Reception halls immediately indicate the spirit of a house. The field is black Marbelle with Linostrips of Brown No. 20 and Fawn No. 45. The star is brown and fawn.

CHAPTER EIGHT

Installing Linostrips in Allover Floors

Where something more decorative than an allover floor is wanted, one or more Linostrips—i. e., narrow strips of linoleum—can be cut into the field of Plain, Jaspé, Marbelle, or Monobelle linoleum, a few inches from the wall.

This produces a border of the same color as the field material but separated from it by harmonizing or contrasting colors. Linostrips may also be used between the field and a border when the field and border are different colors; or as interliners between large sections of field.

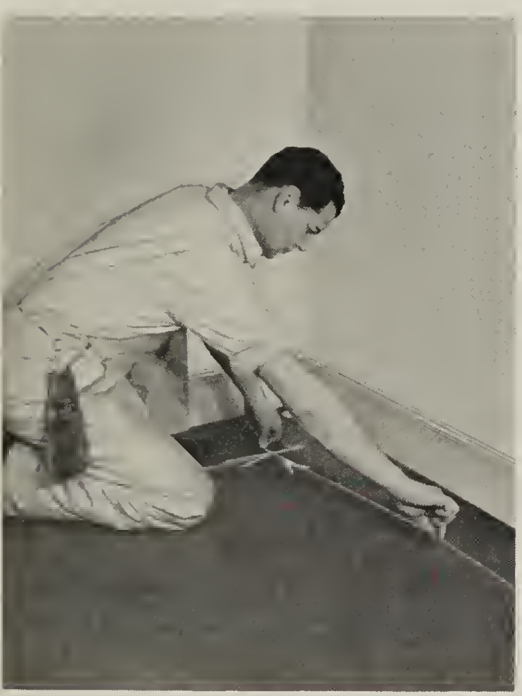


Fig. 50—*Strike a chalk line on the lining felt to indicate the total width of the border and the Linostrip.*

Linostrips in any color or gauge of Battleship, Plain, Monobelle, or Marbelle linoleum can be supplied in several widths.

Following is the easiest method of installing Linostrips in a self-bordered floor:

1. Before laying the linoleum, strike a chalk line on the lining felt, all around the room, to indicate the total width of the border and Linostrips. For example, in Fig. 50, the chalk line is struck 9¼″ from the wall because the layout calls for a 7″ border, a ⅝″ Linostrip, a 1″ Linostrip, and a ⅝″ Linostrip. This line is later used as a guide in spreading paste for the field.

2. Lay the linoleum wall-to-wall by either of methods described in Chapter VI, but do not paste it at any points outside the chalk line 9¼″ from the wall.

3. On all four sides of the linoleum, strike a chalk line 7″ from the walls, Fig. 51. (This is the width of the border here.)

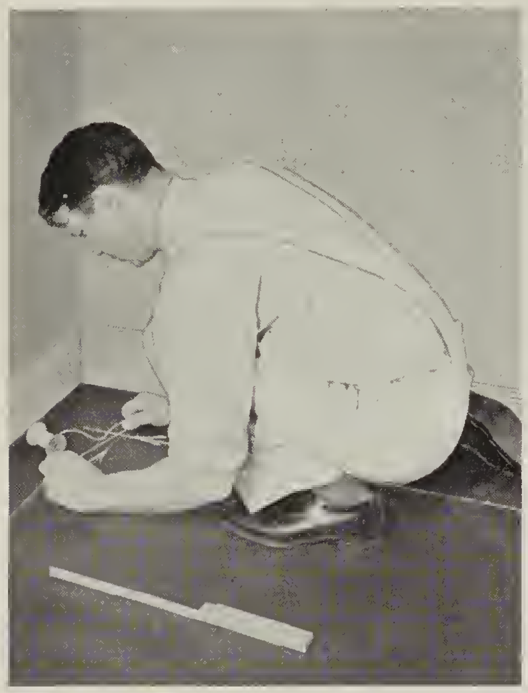


FIG. 51—*When the linoleum has been laid, strike a chalk line equal to the width of the border along all walls.*

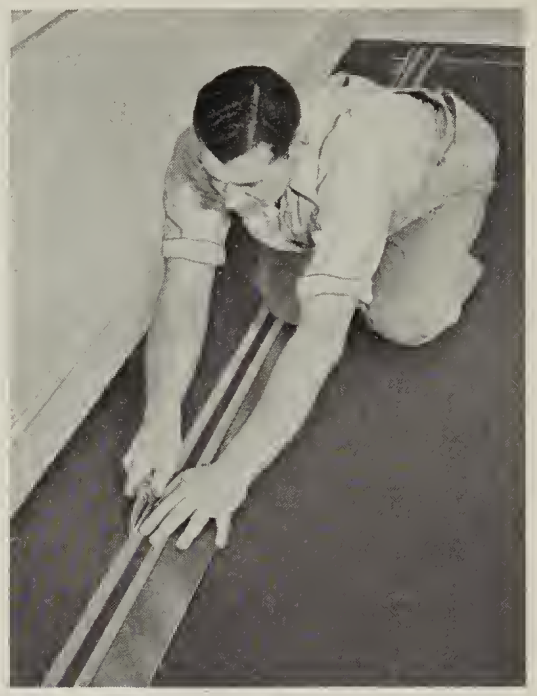


FIG. 52—*Butt a straightedge along the edge of the inside Linostrip, and score along the outside Linostrip.*

4. Cut the Linostrips slightly longer than the required length, so that mitred joints can be cut where the Linostrips overlap at the corners of the field.

5. Lay the outside Linostrip along the chalk line, with the other Linostrips butted against it. Butt a straightedge against the edge of the inside Linostrip, as shown in Fig. 52. (This edge of the straightedge is now directly over the line of the felt.)

6. Score the goods along the outside Linostrip for the length of the straightedge, Fig. 52.

7. Then removing the Linostrips but leaving the straightedge in the same position, score the field linoleum along the length of the straightedge.

8. Repeat steps Nos. 5, 6, and 7 at 6′ intervals along the chalk line until the entire field has been scored with two lines that are 2¼″ apart.

9. With a linoleum knife, cut through the scored lines and remove the strip of linoleum. Be careful not to cut the felt.

10. Insert the Linostrips in the opening to test their fit, as shown in Fig. 53. Then lap back the strips and the 7″ border, and spread paste on the felt with a paste spreader, a 4″ spatula, or

wide putty knife. See Fig. 54. Replace the border and Linostrips in the paste. At corners, where the strips overlap, cut mitred seams.

11. Roll the border and the strips thoroughly with a linoleum roller; then "iron" the seams with a hammer.

12. Sandbag the seams until the paste has thoroughly set.

Second Method

The 2¼″ opening for the Linostrips may also be cut in the field linoleum by using Armstrong's Custom Floor Cutter or Universal Scriber with two blade holders attached, as follows:

1. Strike chalk lines on the felt 9¼″ from the wall, as explained above. Then when the linoleum has been installed wall-to-wall, strike similar lines on it, 7″ from the wall.

2. Attach the two blades to the tool and set them the total width of the Linostrips apart, (in this case, 2¼″). Detailed instructions for doing this are packed with either tool.

3. Lay a 6′ straightedge along the chalk line on the linoleum.

4. With one blade of the tool against the straightedge, which is used as a guide, and with the other blade 9¼″ from the wall,

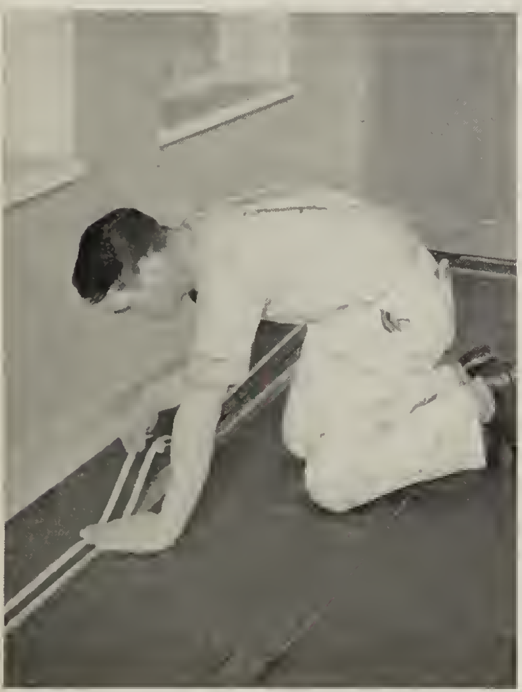


Fig. 53—*Insert the Linostrips in the opening to test their fit. The strips should fit tightly in place.*

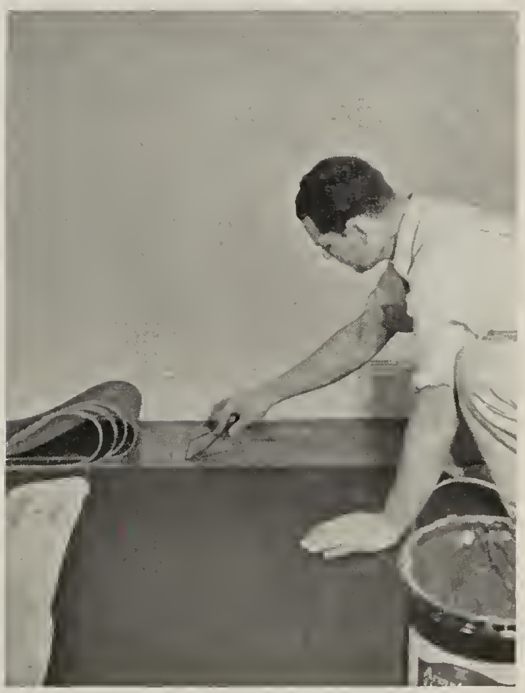


Fig. 54—*Lap back the strips and the border. Apply paste to the felt with a spreader, spatula, or putty knife.*

score the field linoleum along the length of the straightedge.

5. Repeat these steps until the entire field has been scored. Then complete the cuts along the scored lines with a knife or with the tool. Remove the waste material, check the fit, spread paste, and insert the Linostrips as described previously.

If Ready-Cut Linostrips are not used, the Linostrips may be quickly and easily cut to required sizes with Armstrong's Custom Floor Cutter or Universal Scriber. See Chapter XIX.

CHAPTER NINE

Installing Linoleum with Border and Linostrip

Almost any installation of linoleum can be made more attractive by bordering it with Linostrips and border strips in pleasing colors.

Standard ready-cut borders are available in several widths, gauges, and colors.

Floors with border strips and Linostrips used together are installed as follows:

1. When the felt has been installed, cut the strips of field linoleum slightly longer than the planned length of the field, so that there will be extra material for squaring the edges.

The length and width of the field should always be planned so that, at the edges, all blocks, or the most conspicuous blocks, will be whole blocks and not fractions of blocks. In order to have the field "come out even" at all the edges, it may be necessary to change the desired widths of the borders slightly. For example, in Fig. 55:

Suppose that a pattern consisting of 9″ square blocks is to be installed in a room 14′4″ long by 11′ wide, with the desired width of the border established at 9″, as illustrated in Fig. 55.

Lengthwise, the room measures 172″. The 9″ border at each end will take up 18″. Therefore, the field will be 154″ long. To find whether a whole number of 9″ blocks will fill this 154″, divide 9″ into 154″. This gives 17$\frac{1}{9}$, which means that there will be 17$\frac{1}{9}$ blocks lengthwise.

Since fractions of a block are not desirable at the edges, the length of the field must be changed so that either 17 full 9″ blocks or 18 full 9″ blocks will exactly fill it.

Eighteen full blocks would leave only a 5″ border on each side. Since a larger border is wanted, make the length of the field equal to 17 full blocks or 153″. Since the room is 172″ long, this will leave 19″ for borders. Therefore, a 9$\frac{1}{2}$″ border will be used at each end.

The same method of figuring is used to decide upon the proper width of the field and of the side borders. Obviously, the side and end borders are seldom found to be the same width.

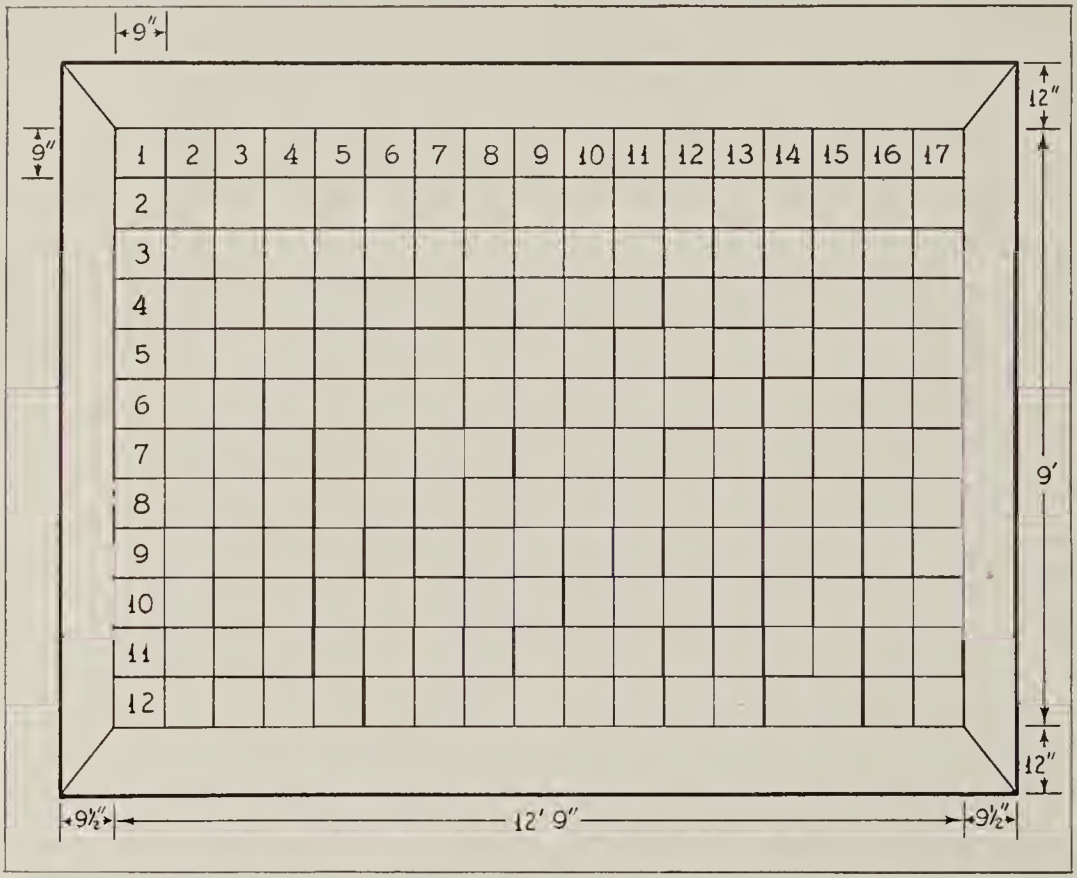


Fig. 55—*The length and width of the field are planned so that, at the edges, all blocks are whole blocks, and not fractions. This accounts for the fact that there is a 12" border at the sides and a 9½" border at the ends of the room.*

2. When the strips of linoleum have been cut slightly longer than the finished length of the field, lay them unpasted on the felt in the same positions that they will occupy in the finished floor. See Fig. 56. In the example above, this would leave a border space of about 9" at each of the ends, and of about 11½" at each side. This space is slightly smaller than the finished border since the strips were cut slightly long for trimming, as explained in step No. 1, above.

3. Cut the seams as described in Chapter VII, selecting the proper type of seam.

4. When all seams have been cut and the strips are tight against each other, draw a chalk line on the felt around all the outside edges of the field linoleum as shown in Fig. 57.

5. Depending upon the shape of the room and whether backed

or unbacked material is being used, lap or tube back the strips of field linoleum. Then, with a saw-toothed rubber paste spreader, as shown in Fig. 57, spread paste on the felt to within 4″ on the chalk line. Then replace and roll the field.

6. Next, square the outer edges of the field, cutting along a straightedge, as in Fig. 58. Cut the material so that the field and border space will be the exact size required in the finished floor. In large block designs, make sure that the field ends with full-sized blocks, as explained in No. 1 above.

7. Border strips slightly wider than the finished width of the border are cut to the required lengths. For example, a strip 13″ wide would be cut to make a finished border 12″ wide.

8. Press this border strip tight against the wall. Then with dividers set at ½″, scribe the border strip along the entire length of the wall, as shown in Fig. 59. Cut the border along the scribed line and lay it unpasted in place against the wall. (The border is now 12½″ wide, leaving ½″ for final trimming.)

9. Lay the opposite side of the border under the unpasted edge

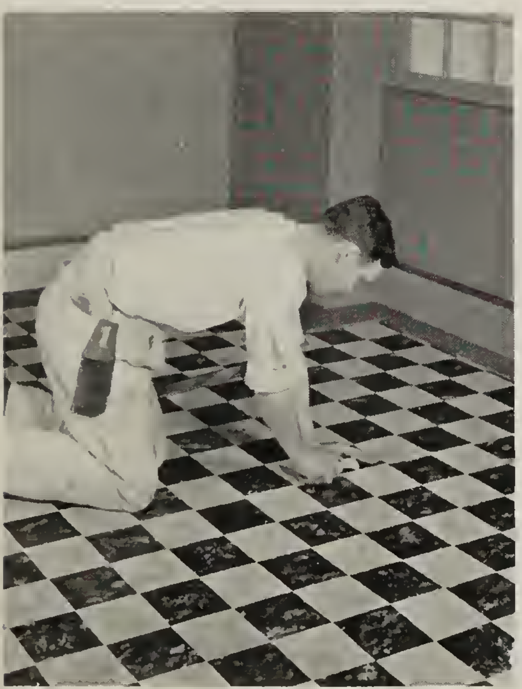


Fig. 56—*Cut the strips slightly longer than the field length. Lay them unpasted in their correct positions.*

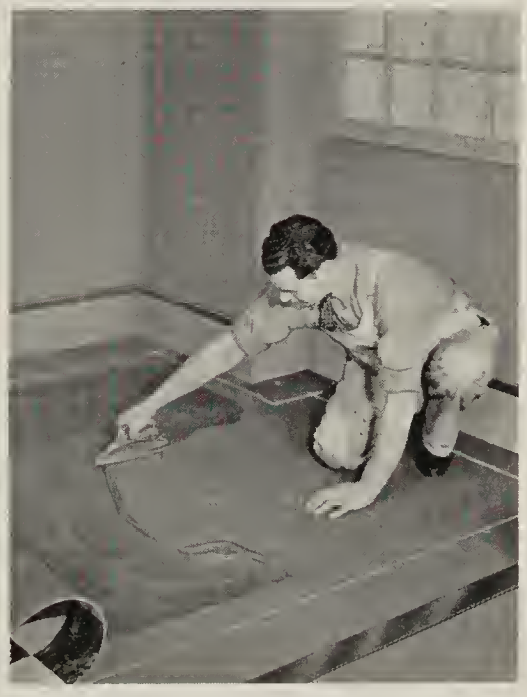


Fig. 57—*Outline the field with chalk. Lap or tube it back, and spread paste to within 4″ of the chalk line.*

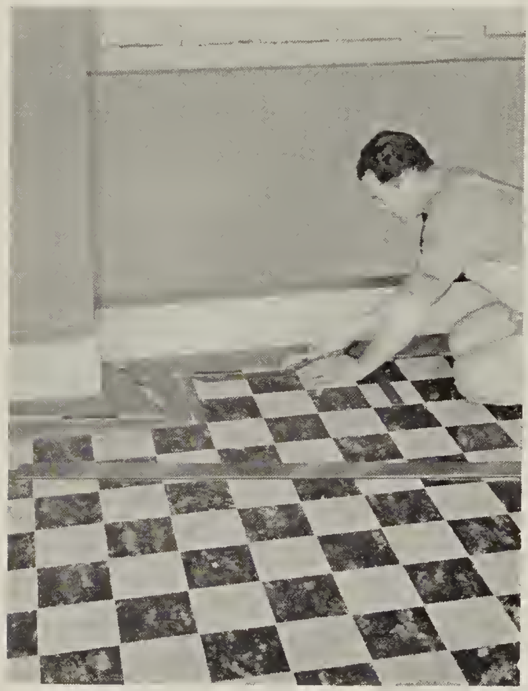


Fig. 58—*Square the field with a straightedge, so that the field and border spaces are the required sizes.*

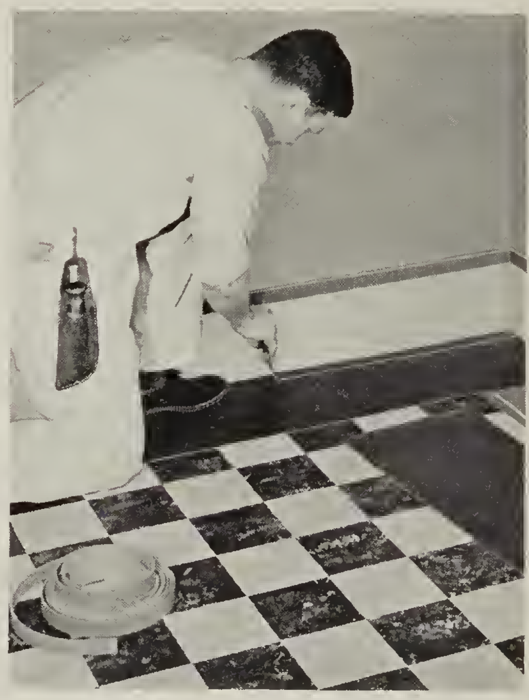


Fig. 59—*With the border tight against the wall, set dividers at ½". Scribe along the entire length of wall.*

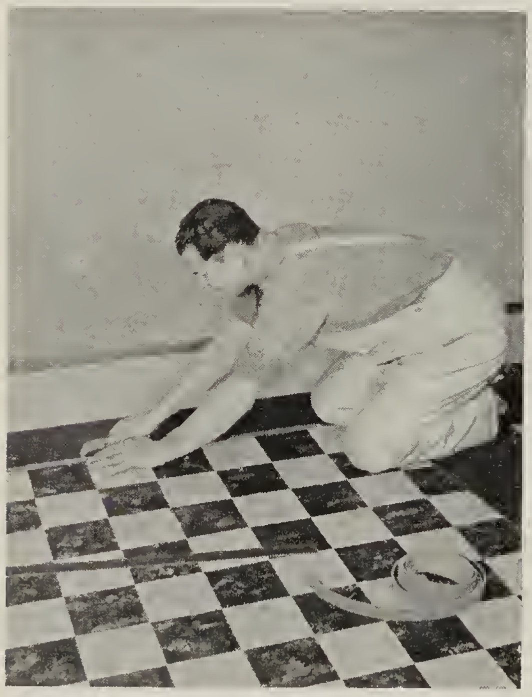


Fig. 60—*Butt the Linostrip to the edge of the field overlapping the border. Score the border along the Linostrip.*

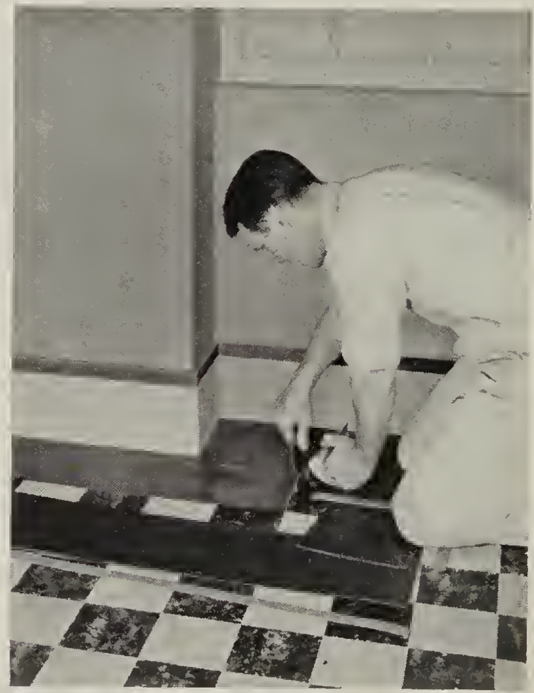


Fig. 61—*Lap back the strips. Spread paste on all the exposed felt and under the unpasted edge of the field.*

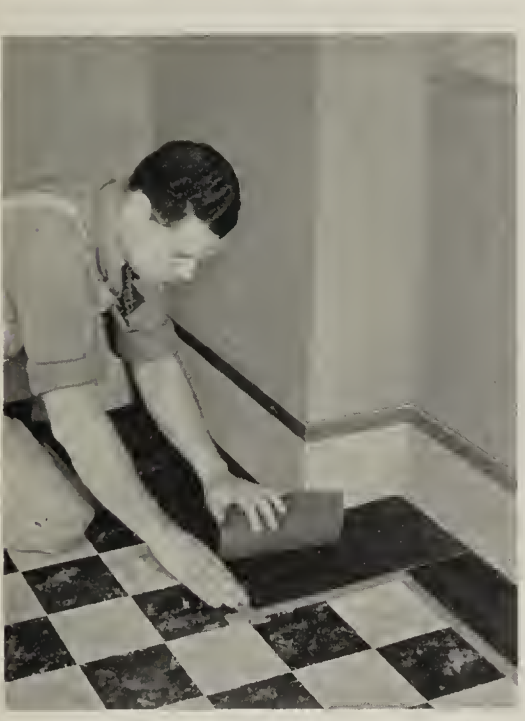


FIG. 62—*Lay the border and the Linostrips in the paste. At corners, the ends will overlap adjoining strips.*

of the field linoleum, which will overlap the border by ½″.

10. Cut the Linostrips to the desired lengths, making sure that there is enough material for overlapping and cutting mitres where the strips meet at corners.

11. Butt one of the Linostrips against the edge of the field that is overlapping the border strip. Then using the other edge of the Linostrip as a guide for the knife, as in Fig. 60, score the border strip along the entire length of the Linostrip. Cut through the scored line, taking care not to cut the felt. Then insert the border strips and Linostrips in their proper positions and check them for fit.

12. Repeat these steps along all the edges of the field.*

13. Next, lap back the strips or lay them to one side, Fig. 61. Spread paste on the exposed section of felt and also under the 4″ unpasted section of the field. Use a saw-toothed rubber paste spreader on the exposed felt. Use a 4″ putty knife or spatula under the unpasted edge.

14. Lay the border strips and Linostrips in the paste. At cor-

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*A faster but less accurate method of fitting the border and Linostrip is as follows:

1. If, for instance, the finished total width of the border and 1″ Linostrip is to be 9″, take a 9″ wide border strip and cut it along a straightedge until it is 8½″ wide.

2. Butt this squared edge of the border strip against the squared edge of the field (the field having been squared as described in step 6 above).

3. Set dividers to the exact width of the Linostrip (in this case, 1″). With one leg of the dividers on the border strip and the other leg against the wall, scribe the exact contour of the wall on the border strip.

4. Cut the border strip along this scribed line, and push it tight against the wall. (This will leave an opening between the border and the field. This opening will be the exact width of the Linostrip.)

5. Insert the Linostrip in the opening between the border and the field.

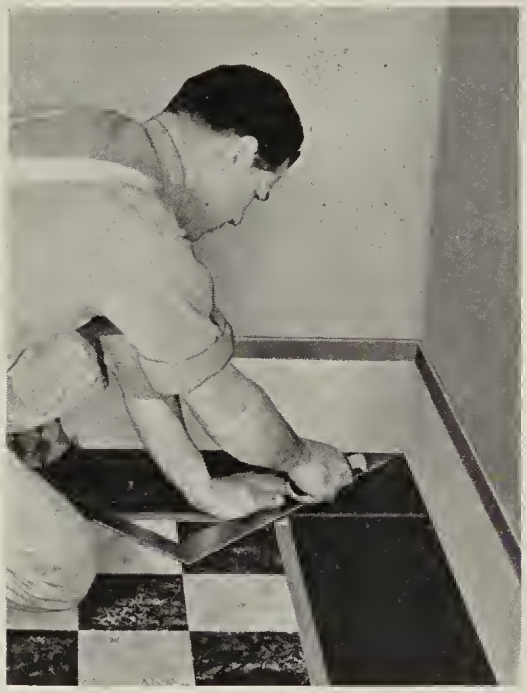


Fig. 63—*Using a straightedge, mitre by cutting through the overlapping strip and scoring the under strip.*

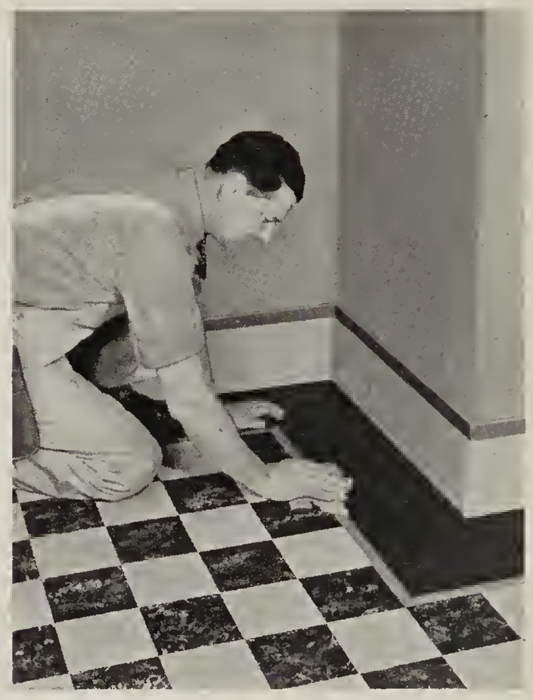


Fig. 64—*When all corners have been mitred, roll the strips with a linoleum roller and wipe up all excess paste.*

ners, the ends of the strips will overlap the ends of the strips that run along the adjoining wall. See Fig. 62.

15. Before rolling the strips, cut mitred joints where the strips overlap at the corners. This is done as follows:

a. To cut a mitre in the Linostrips, lay a small straightedge or square *from the corner of the field to the far corner of the Linostrips*. With a knife, cut through the overlapping strip and deep enough to score the under strip. Then cut the under strip.

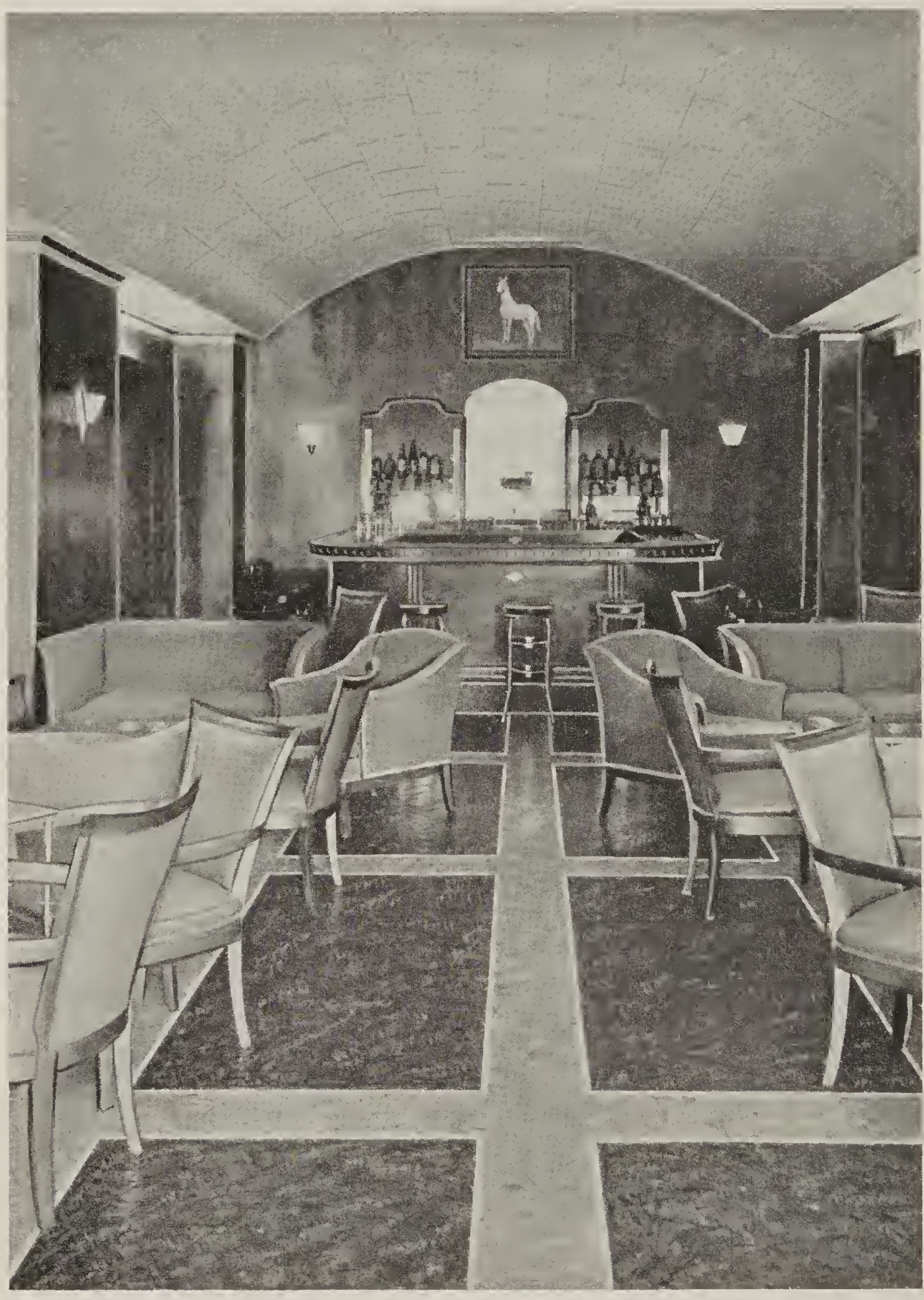
b. To make a mitre in the border, lay a straightedge *from the corner of the room to the corner of the Linostrips that is nearer you*, as shown in Fig. 63.

With a linoleum knife, cut through the overlapping border strip and deep enough to score the under border strip. Then cut through the scored line of the under strip.

Note: Where a border and one or more Linostrips are used together, cut the mitre in the Linostrip first; then mitre the border. *Never cut the mitre direct from the corner of the wall to the corner of the field.*

Where the side and end borders are of different widths, the angles of the mitres in the border and Linostrip are different.

15. When all the corners have been mitred, roll the strips with a linoleum roller and wipe up excess paste that oozes through the seams. See Fig. 64. The seams may be dampened and "ironed" with a hammer head, if necessary, to make them flush.



The Cocktail Room of the Pawnee Hotel, North Platte, Nebraska, uses a field of black Marbelle with Linostrips of Jade No. 42 and White No. 23 to provide contrast.

CHAPTER TEN

Methods of Scribing

Where linoleum must be fitted against an irregular or off-square vertical surface (wall, pillar, offset, radiator leg, etc.) the mechanic should scribe the linoleum rather than guess where to make his cuts.

Scribing consists of transferring the exact contour of a vertical surface to the linoleum. It can be done with (1) an ordinary pair of dividers; or (2) with Armstrong's 18″ Scribing Tool where the spread of the dividers is not wide enough; or (3) with Armstrong's Recess Scribing Tool where the linoleum has to be fit against recessed surfaces; or (4) with Armstrong's Universal Scriber, which will do all the types of scribing listed above.

Various Tools

Dividers: The piece of linoleum to be fitted is pushed against the vertical surface, touching the surface at as many points as possible. If the surface is not true, this will leave gaps between the linoleum and the vertical surface.

At the spot where the distance between the edge of the linoleum and the vertical surface is greatest, set your dividers so that one point just touches the wall and the other point just rests on the linoleum. Then, keeping the dividers set in this way, one point always in contact with the wall, draw the dividers along the whole length of the linoleum. *The dividers should always be held at right angles to the edge of the linoleum. See Fig.* 65. The point that is on the linoleum will scribe a line that exactly follows the contour of the wall. The linoleum is cut along this line with a linoleum knife, and, when pushed against the wall, fits exactly.

Dividers should not be used when the distance between points must be greater than 3″, due to the difficulty of doing accurate scribing. In such cases, the 18″ scribing tool should be used.

Scribing Tool—This device is adjustable to distances up to 16″. It is operated in practically the same way as dividers. One end is pressed against the vertical surface. The adjustable point is placed on the linoleum at a distance equal to, or slightly greater than, the greatest distance of the linoleum from the vertical surface; and the tool is moved at right angles to the goods, as explained above for dividers. See Fig. 66.

Recess Scribing Tool. The operation of this tool is described in Chapters XII and XIII, under stair and sink-top installations.

Universal Scriber. Mechanics who have this tool will find complete directions with it.

Scribing around Radiators

The following explanation of scribing to fit around a radiator is typical of a problem frequently encountered. To solve it, we use the 18″ scribing tool, as follows:

1. After the felt has been pasted to the subfloor, the linoleum is butted against the radiator pipes or legs, parallel to the wall line, as shown in Fig. 66. In most cases, the four legs of the radiator can be raised off the floor by placing wood blocks under the shoulder of the pipe elbows. Place these blocks behind the vertical pipe, so that the material can be butted to the front edge of the pipes. If the legs cannot be raised, the material can be fitted as follows:

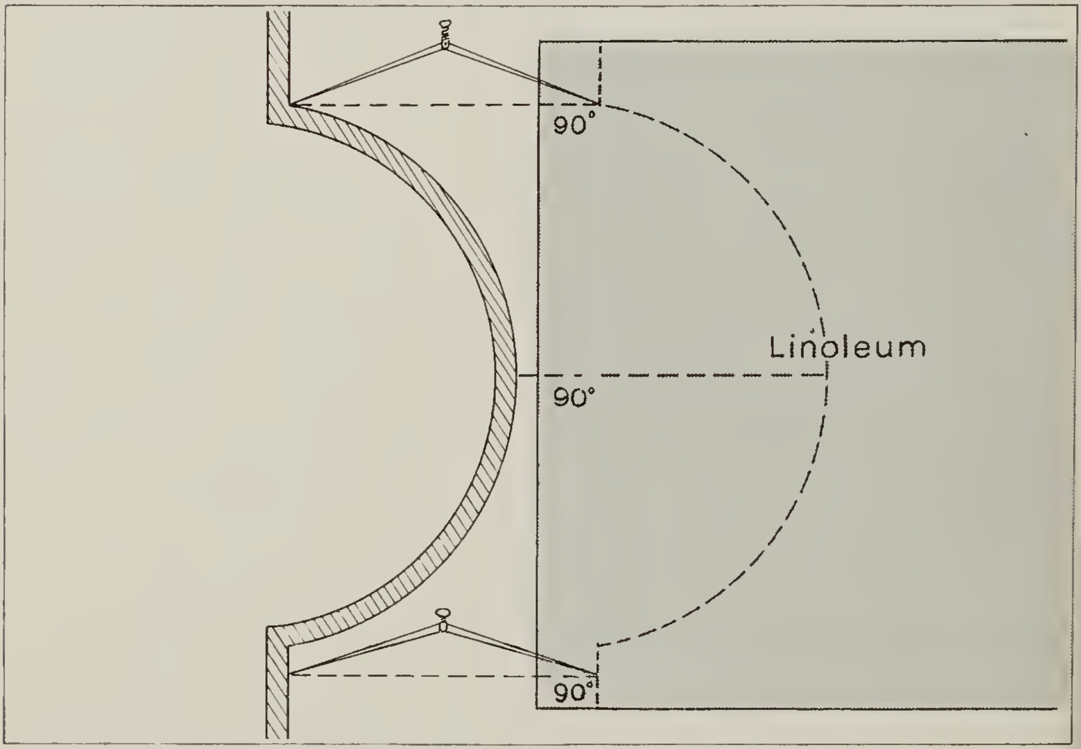


Fig. 65—*With the goods close to the vertical surface, set the dividers at the greatest distance between this surface and the goods. Hold dividers at a 90 degree angle to the edge of the linoleum. Scribe the contour of the wall onto the goods.*

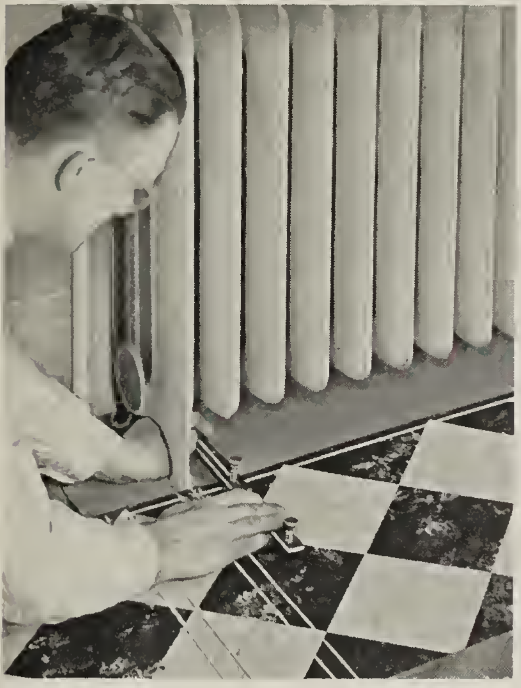


FIG. 66—*On the field, strike lines to mark the edges of pipes and legs. Use an 18″ scriber to mark the contour of the wall.*

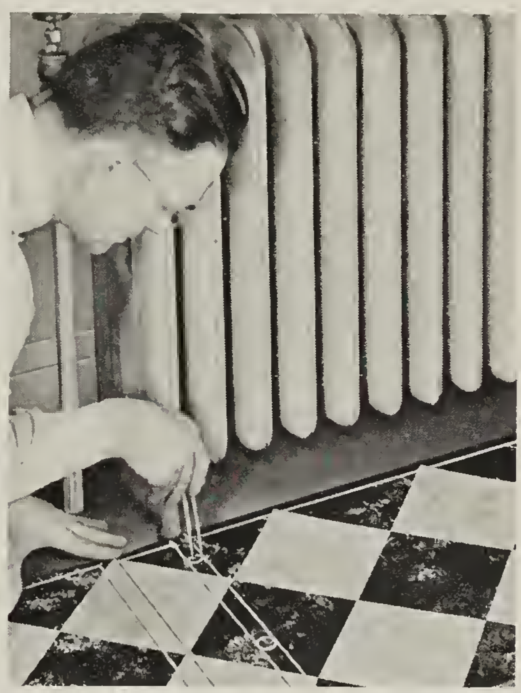


FIG. 67—*With dividers set to half the leg thickness, draw a circle at the point scribed from the edge of the leg.*

2. The adjustable point of the scriber is set at a distance equal to ½″ more than the greatest distance between the wall and the edge of the linoleum. The extra ½″ is allowed to take care of discrepancies in the wall line that may have been overlooked.

3. With a straightedge and chalk, draw, on the linoleum, lines marking the edges of the radiator pipes and radiator legs, as shown in Fig. 66. Draw these lines at right angles to the edge of the linoleum.

4. Starting at the end of the strip of linoleum, place one end of the scribing tool against the wall. Place the point on the linoleum; draw the tool along the whole length of the linoleum, so that the point marks the linoleum with the exact contour of the wall line. Be sure to repeat this scribing operation beneath the radiator, Fig. 66.

5. Next, place one end of the scribing tool against the front edge of the radiator pipe, so that the point falls between the two parallel lines on the linoleum. Draw the tool across the front edge of the pipe, so that the linoleum will be marked with a line indicating how far into the goods the pipe will eventually extend.

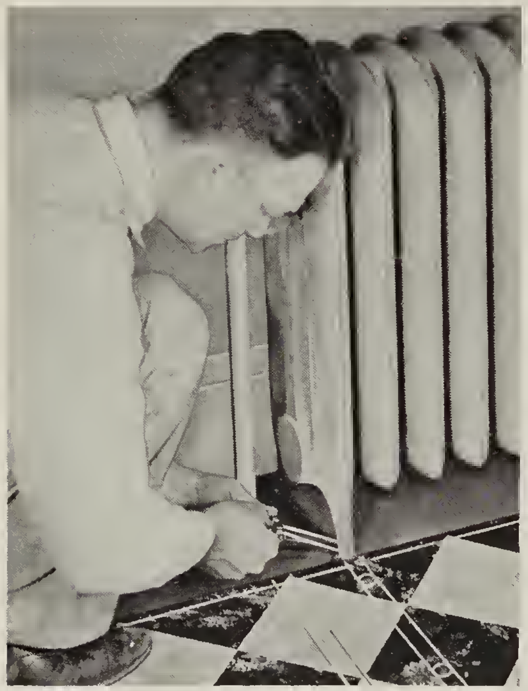


FIG. 68—*Where the feet of the radiator are not circular, set the dividers to the exact depth of the feet.*

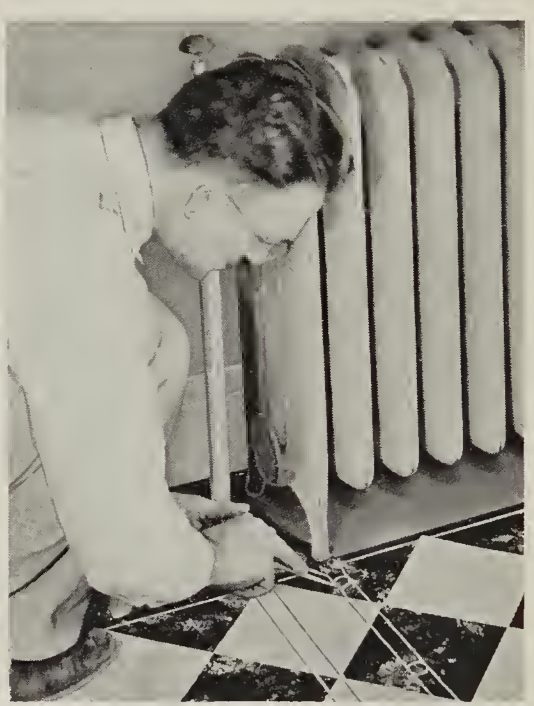


FIG. 69—*Place divider point against the front edge of the circle and strike an arc between the parallel lines.*

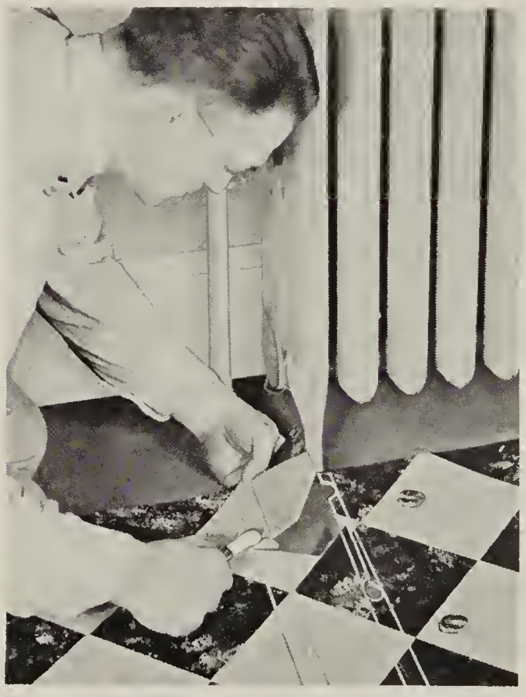


FIG. 70—*Cut all the required openings. Also cut across to the hole for the pipe, cutting along one of the pattern lines.*

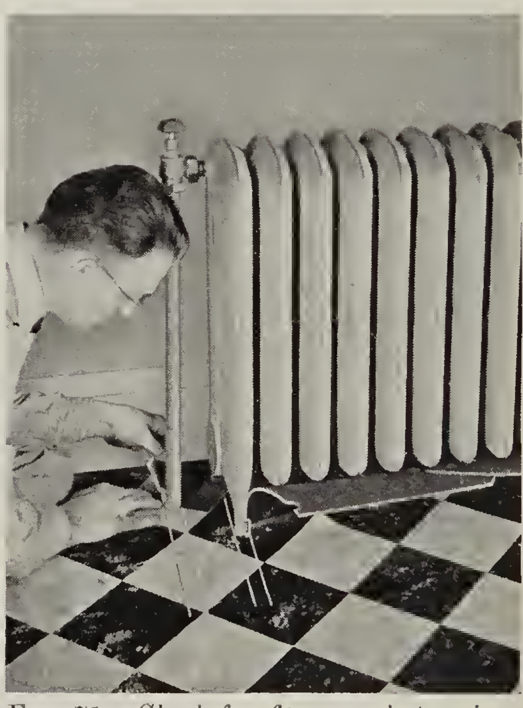


FIG. 71—*Check for fit around the pipes and front legs, but do not push the linoleum completely under the radiator.*

6. Repeat No. 5 at each pipe and at each radiator leg.

7. Set a pair of dividers to half the thickness of the radiator legs. Place one point against the line that was scribed from the front edge of the leg. Place the other point midway between the parallel lines. Using this latter point as a center, draw a circle as shown in Fig. 67.

8. Repeat No. 7 for each of the front and rear legs; and also for each of the pipes. When marking for the pipes, set the dividers to one half the diameter of the pipes.

a. If the feet of the radiator are not circular, set the dividers to the exact depth of the leg, as shown in Fig. 68. Then placing one point against the part of the circle that represents the front edge of the leg, strike an arc between the parallel lines, as shown in Fig. 69.

9. Trim the linoleum along the scribed line that represents the contour of the wall.

10. After the edge is trimmed, cut openings for the legs and pipes as shown in Fig. 70. So that the linoleum may be slid against the wall, cut along one of the parallel lines that connect the leg holes. Also cut across to the hole for the pipe. In making these various cuts in the material, cut along the lines that separate blocks of different colors, insofar as possible. This will make the seams considerably less conspicuous.

11. Check the linoleum for fit around the pipes and front legs, Fig. 71. Do not push the linoleum completely under the radiator for this test, because it will be difficult to remove.

12. If the linoleum checks, tube it or lap it back; and spread paste on the felt with a saw-toothed rubber spreader. Then replace the linoleum neatly, rolling it and smoothing seams as

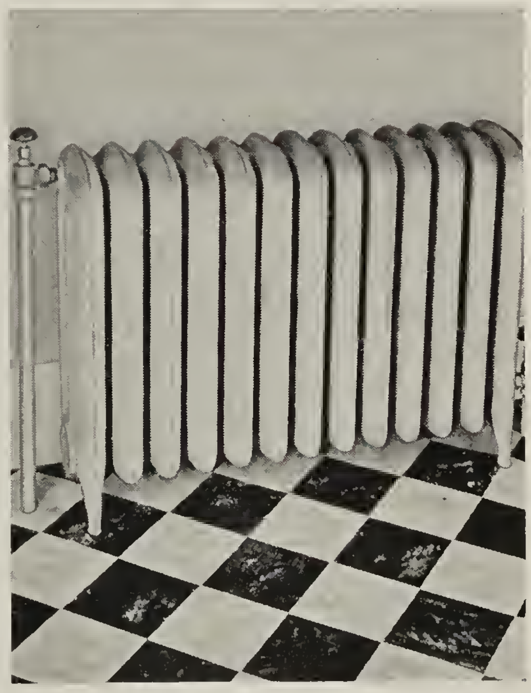


FIG. 72—*The finished job after pasting and rolling. Note how exactly the linoleum fits about pipes and legs.*

previously described. The finished job is shown in Fig. 72.

How to Do Pattern Scribing

Pattern scribing consists of two simple operations: (a) scribing the contour of vertical surfaces to a piece of lining felt or heavy wrapping paper; and (b) transferring by rescribing the lines on the felt onto the linoleum.

Pattern scribing is an accurate and convenient method of fitting linoleum in small rooms where it would be difficult to scribe the linoleum itself. Once the pattern is made, the actual cutting of the linoleum can be done in other rooms or in the workroom, so that the linoleum can be carried in ready to install.

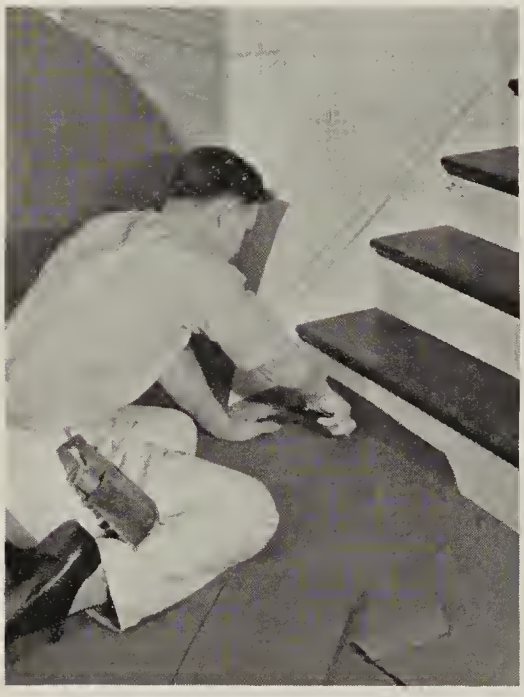


Fig. 73—*Fit unpasted strips of felt to within ⅛″ of vertical surfaces. Butt the strips tightly at the seams.*

Pattern scribing can be used to advantage in small bathrooms, closets, etc., also in installing Flash Type Cove and Base, as described in Chapter XI, and linoleum sink tops, as described in Chapter XII.

Pattern scribing is done in the following manner:

1. Fit all the unpasted strips of lining felt neatly to within ⅛″ (or less) of all vertical surfaces, with the strips butted tightly at the seams—exactly as they will be when pasted down. See Fig. 73.

2. Across each seam, strike a chalk mark as shown in Fig. 74. These lines will indicate whether the felt has slipped during the following operations.

3. Set a pair of dividers at ½″. With one point of the dividers pressed against the vertical surface, and with the other point on the lining felt, as in Fig. 75, draw the dividers along the wall and felt, so that the exact contour of the wall is scribed on the felt. *In pattern scribing, always hold the dividers at right angles to the vertical surface and not at right angles to the felt.* See Fig. 76 and compare it with Fig. 65. (This is exactly

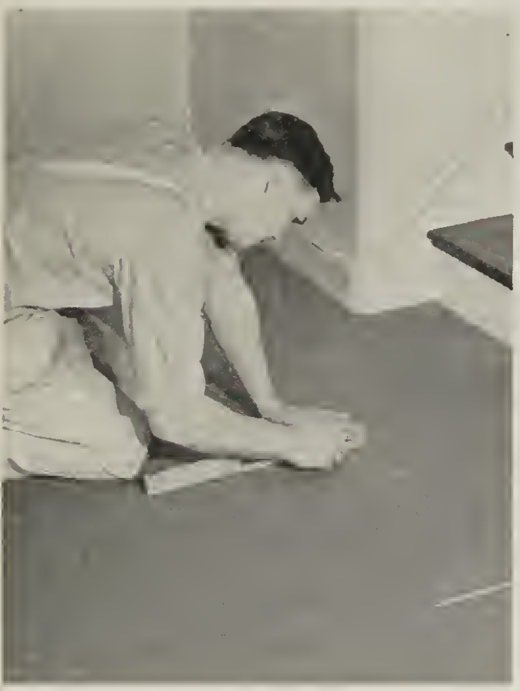


FIG. 74—*Across each seam, strike a chalk mark to show whether the felt has moved during the following operations.*

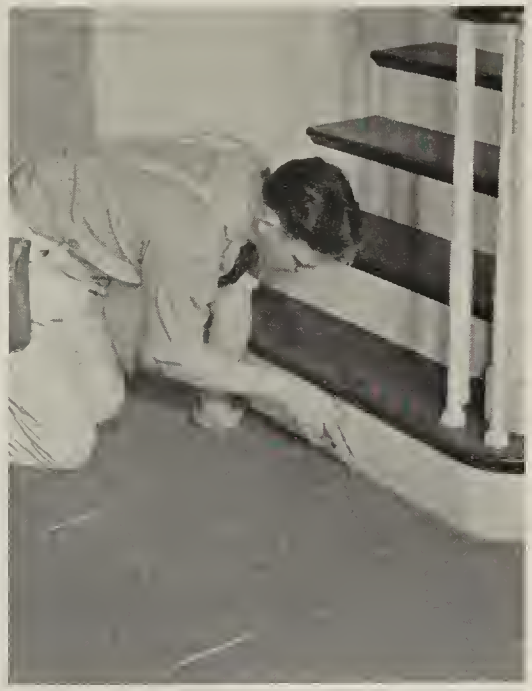


FIG. 75—*With dividers at ½", draw them along the stair so that the exact contour is scribed on the felt pattern.*

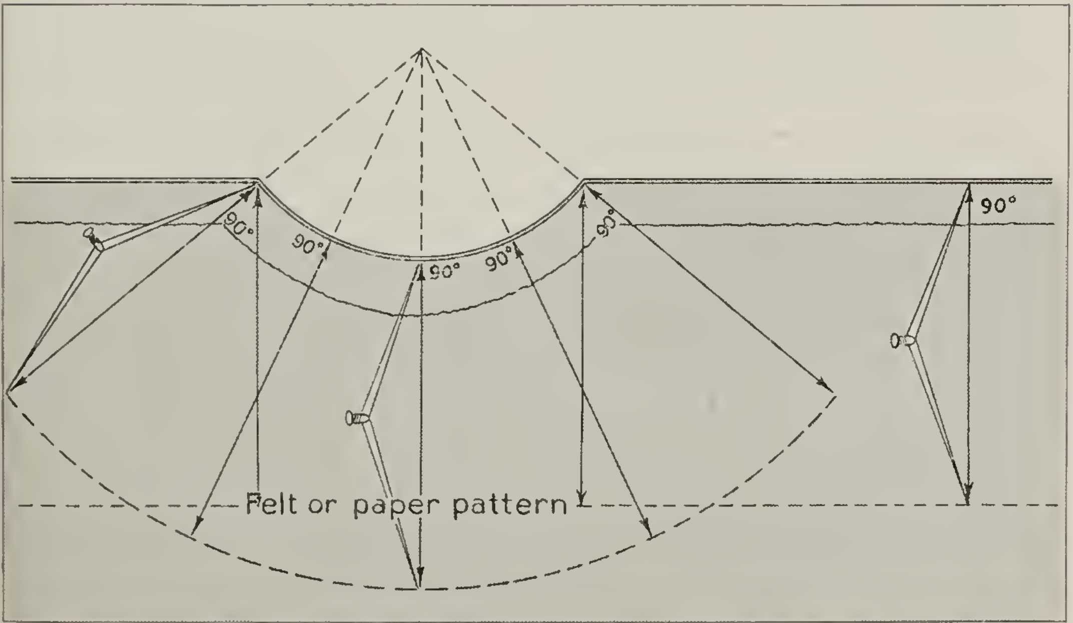


FIG. 76—*In pattern scribing, hold the dividers at right angles to the vertical surface and not at right angles to the pattern. With dividers at this angle, draw them along the wall, scribing the exact contour of the wall onto the felt pattern.*

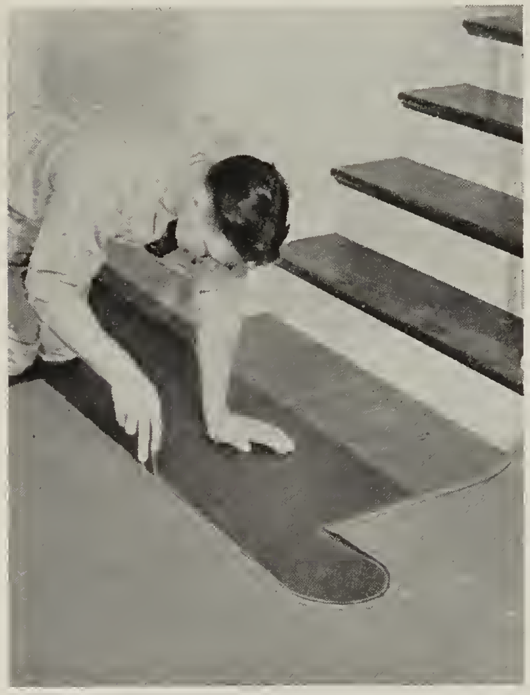


FIG. 77—*Lay the scribed felt pattern on the linoleum. With the dividers at ½", transfer the scribed lines.*

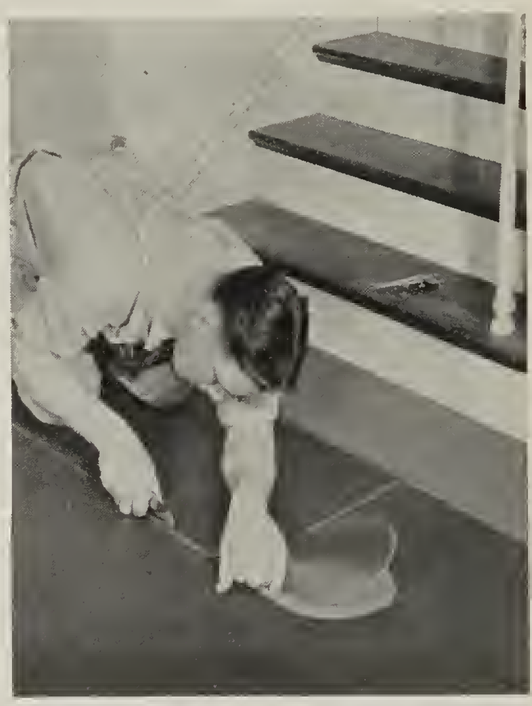


FIG 78—*Remove the felt pattern and cut through the scribed lines on the linoleum. Then paste the lining felt.*

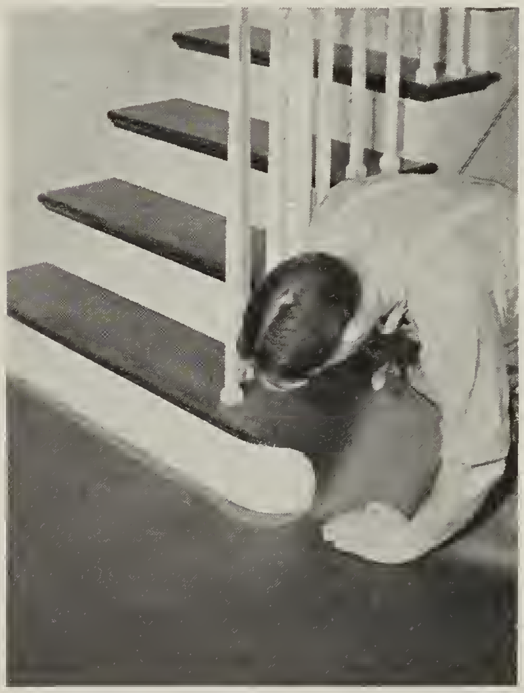


FIG. 79—*Over the pasted felt, lay the linoleum unpasted, to check its fit with the vertical surfaces, as above.*

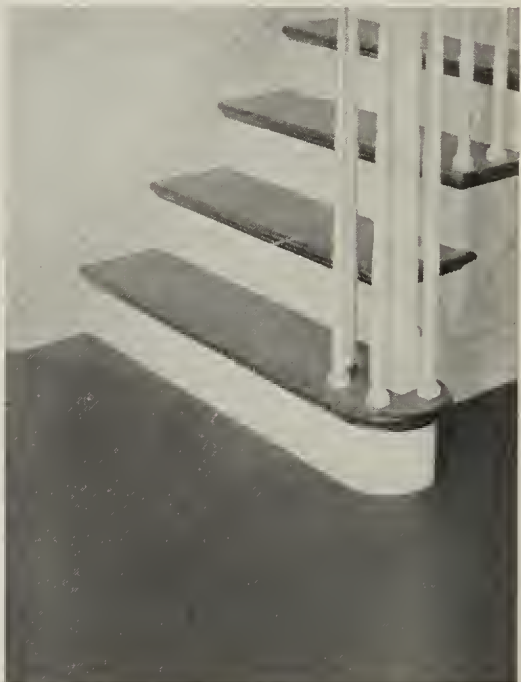


FIG. 80—*To produce a finished job, tube back and paste the linoleum, replace it, and roll it to smooth the seams.*

opposite to the method described for ordinary scribing.)

4. The piece of linoleum to be scribed is laid flat on the floor of another room or of the same room. If the same room, first remove the lining felt.

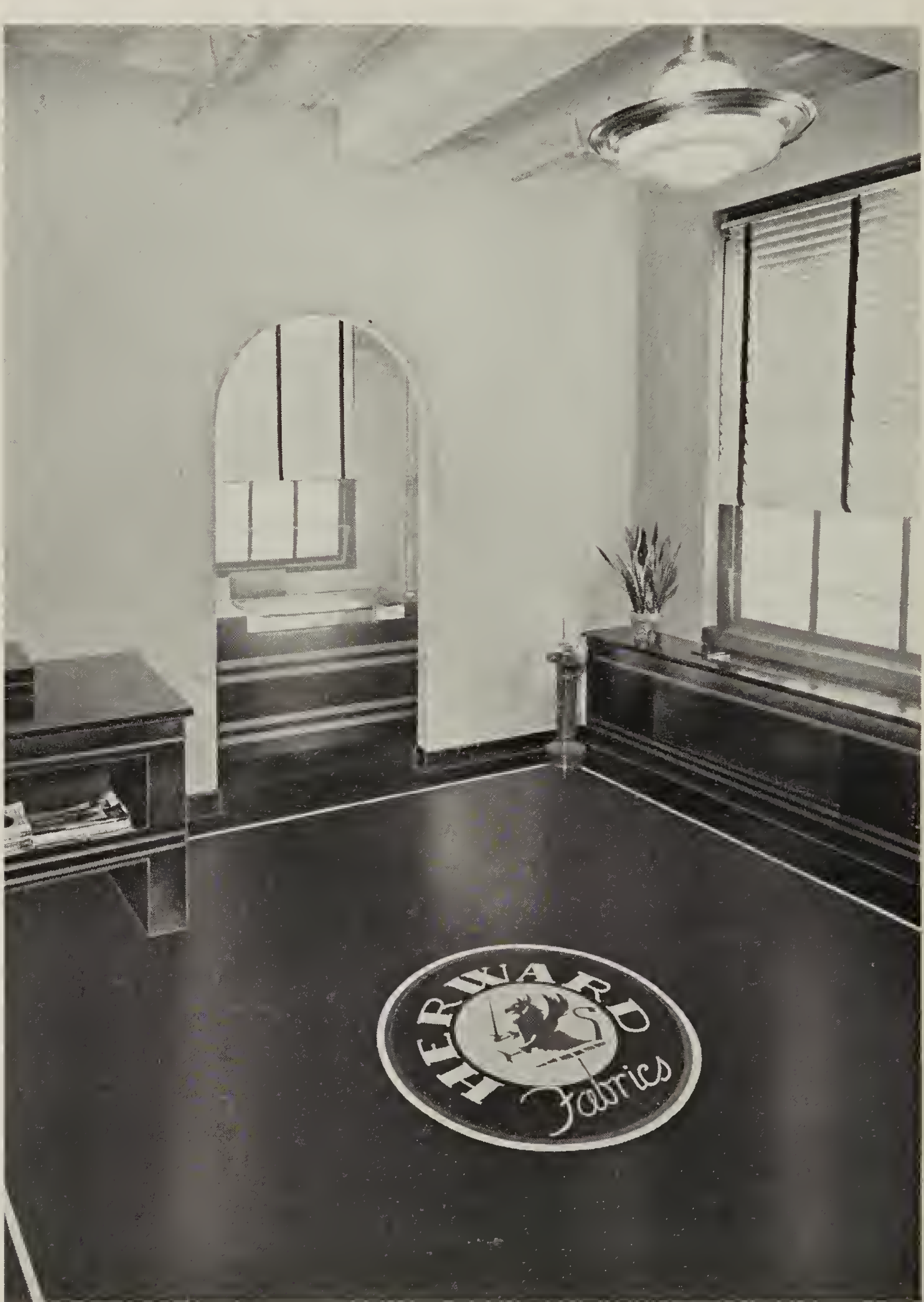
5. On top of the linoleum, lay the scribed pieces of lining felt in such a way that the chalk lines crossing the seams in the felt are exactly in line. These chalk lines will be seen at the lower right corner of Fig. 77. To prevent the felt from slipping, fasten it to the linoleum with small dabs of paste, sandbags, or strips of adhesive tape.

6. With the dividers still set at ½″, place one point on the scribed line of the felt and the other point on the linoleum. Hold the dividers so that they are at right angles to the lines on the lining felt. Then draw the dividers along the scribed line, Fig. 77, so the other point scribes the outline of the vertical surface on the field.

7. Remove the lining felt and cut through the scribed lines on the linoleum with a knife, as shown in Fig. 78.

8. Paste the felt to the floor and roll it in the usual manner.

9. Over the pasted felt, lay the linoleum unpasted, as in Fig. 79, to check its fit with the vertical surfaces. Then, tubing or lapping it back, spread paste on the felt, replace the linoleum, roll it, and smooth the seams in the usual manner. The completed job is shown in Fig. 80.



Foyer of the Herward Fabrics Company, New York, includes a trade-mark Custom-Craft design in its floor. This means of identification is also useful in chain stores.

CHAPTER ELEVEN

How to Install Cove and Base

1. Flash Type

Any linoleum floor becomes more attractive when a neat, colorful cove and base forms a sanitary curved joining at the walls. Armstrong's Flash Type Cove and Base provides a convenient and economical means of producing such a joining.

Flash Type Cove and Base, Figs. 81 through 84, is a joining that is virtually an extension of the floor material.

The installation of Flash Type Cove and Base is not difficult if a few simple rules are observed. The metal binding strip is nailed to the wall first. Then Armstrong's ¾″ Fillet Strip is laid on the underfloor or lining felt to form a coved joining of the floor and wall. Then linoleum of ⅛″ gauge or less is pattern scribed and slipped under the binding strip, curved over the fillet, and pasted flush with the field or Linostrip.

Flash Type Cove and Base not only permits the use of any color of linoleum but also eliminates all unsightly and unsanitary seams close to the wall.

The strong fabric-covered fillet, which comes in continuous 50′ lengths in coils, is easy to carry and always ready to use. It forms a solid backing and because of the inert core is not affected by moisture.

At corners, Armstrong's Inside and Outside Metal Corner Pieces provide a durable and sightly finish that cuts installation time to a minimum. These sturdy corners withstand scuffing and bumps from brooms, etc.

The metal end stops are neat metal stampings for closing the ends of Flash Type Cove and Base. They are often used in modern construction where door frames are omitted. They are also used on linoleum sink tops with flashed construction.

End stops for right or left ends are available in the colors of the binding strip and corner pieces.

Sizes

The metal corner pieces and the metal end stops are available in 4½″ or 6″ heights. The corner pieces, end stops, and metal binding strip are supplied in various attractive colors.

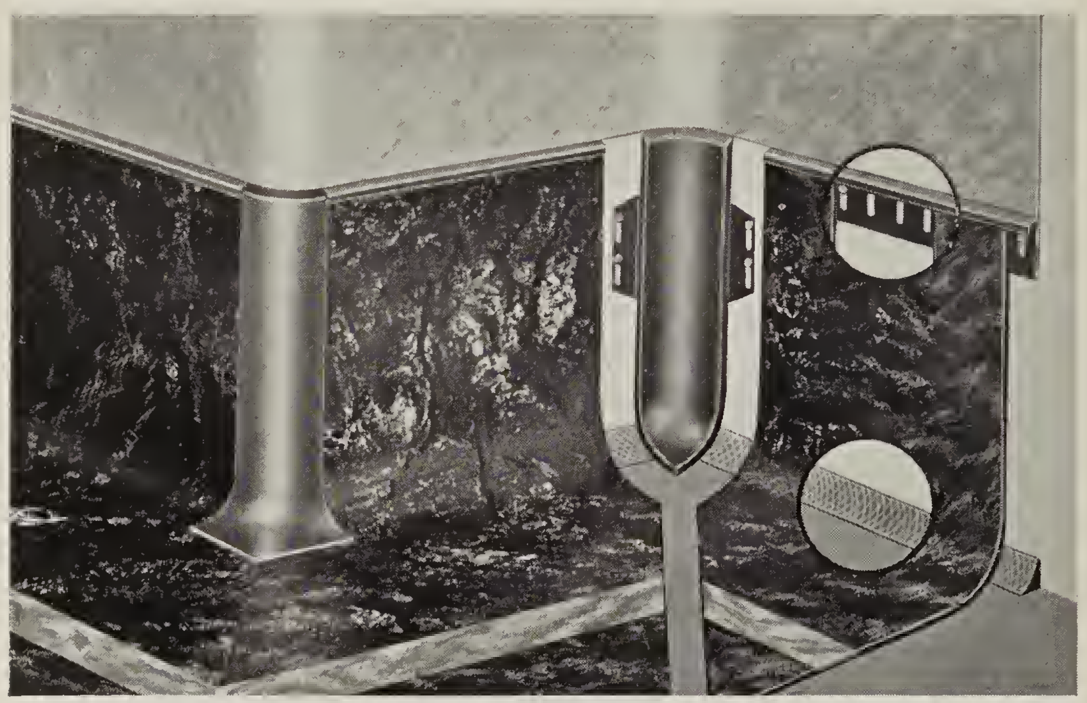


Fig. 81—*Armstrong's Flash Type Cove and Base provides a joining that is virtually an extension of the floor. Permitting the use of any color of linoleum, it eliminates seams close to the wall. All parts are durable and easy to install.*

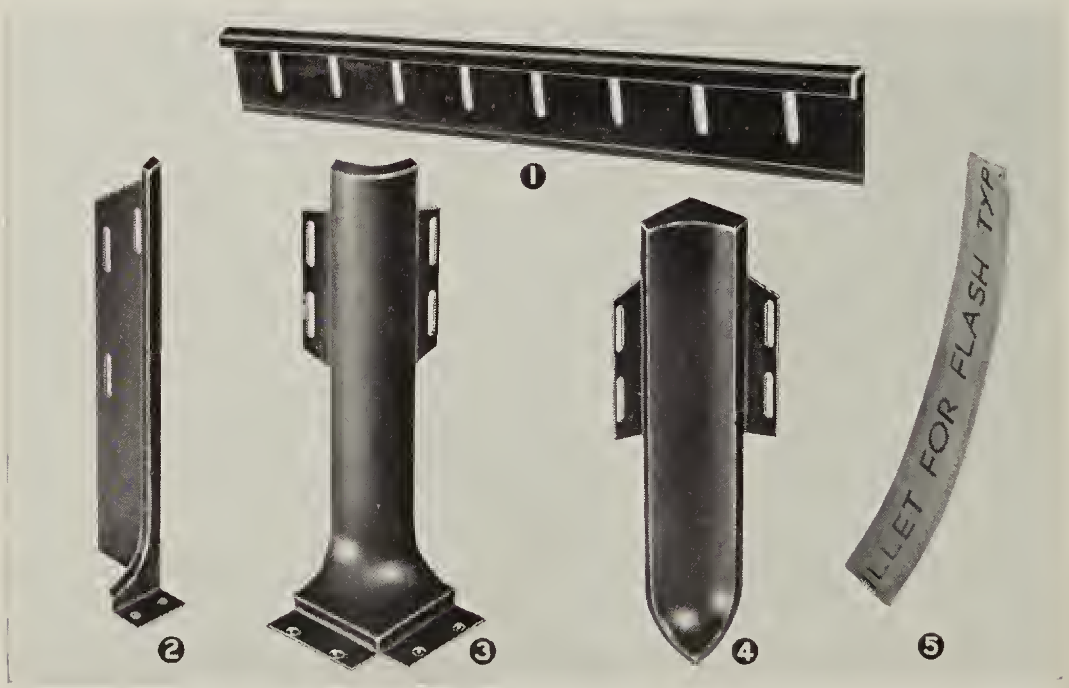


Fig. 82—*Parts for the installation of Flash Type Cove and Base:* (1) *metal binding strip;* (2) *metal end stops for right or left ends:* (3) *outside metal corner:* (4) *inside metal corner:* (5) *¾″ fillet strip. End stops and corners are 4½″ or 6″ high.*

The metal binding strip is furnished in 72″ lengths with a flange of approximately 1¼″.

Because cove and base is often used to join linoleum floors and Linowall, the colors of the binding strip, corner pieces, and end stops are made to harmonize with, but not exactly match, either of these materials.

Preparation of Walls

Concrete: If concrete walls are not equipped with a wood ground of suitable height for nailing the metal parts, place ⅝″-diameter wood plugs not less than 1″ long, in the walls—at the proper height for the various metal parts, and at intervals of not more than 12″ and not less than 6″. The face of the plugs should be flush with the surface of the wall.

The concrete should run all the way down to the floor line. It should be smooth, even, and free from pits or other imperfections that might show through the coved linoleum. The concrete should be thoroughly dry.

Plaster: If plaster walls are sound, and if the lath is rigid and not springy, the metal parts of the cove and base may be nailed to the studs and lath. (Otherwise, insert a wood ground not less than 1″ wide and thick enough to be flush with the surface of the plaster.) See Figs. 83 and 84. The top of the ground should be 5⅞″ from the floor level for a 6″-high cove and base; and 4⅜″ for a 4½″-high cove and base.

The plaster below the wood ground should extend all the way to the floor level; and its surface should be free from imperfections that might show through the coved linoleum.

If the plaster does not extend to the floor, extend it with patching plaster, or with a suitable wallboard furred flush with the face of the plaster. All openings between the wood ground and the wallboard, or between the wood ground and the old plaster, should be filled with patching plaster and finished smooth and level. The plaster and all patches in it should be thoroughly dry before cove and base is installed.

Linowall: When cove and base is to be installed on walls covered with Linowall, the Linowall should be installed first.

In small rooms, the bottom edge of the Linowall should extend to the floor line. See Fig. 83.

In larger rooms, where extending the Linowall to the floor line would cause considerable waste, the Linowall should extend to a point between the top and bot-

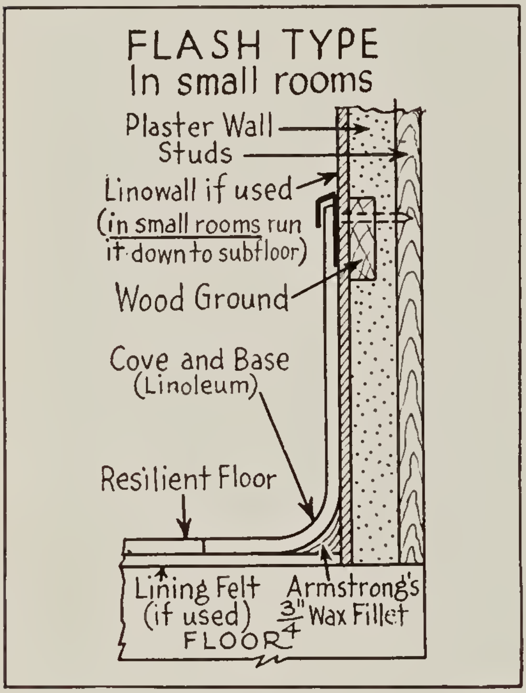


Fig. 83—*Cross-section of cove and base installation for small rooms, with Linowall extended to floor line.*

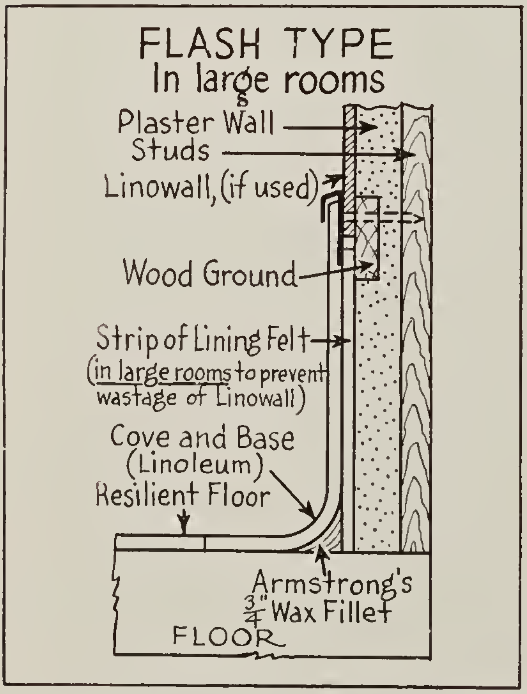


Fig. 84—*In large rooms, Linowall extends to the mid-point of the binding strip, with felt between it and floor.*

tom of the binding strip. In the space between this point and the floor line, a strip of Armstrong's Lining Felt should be pasted before the fillet strip is installed. See Fig. 84 for details.

Preparation of Floors

The metal parts can be nailed direct to wood floors, which should be smooth, solid, and free from cracks or splinters.

If concrete floors do not have a suitable wood ground for nailing the bottom of the metal outside corner pieces, set ⅝"-diameter wood plugs, not less than 1" long, into the concrete, with their centers 1¼" from the finished wall line.

Plugs for nailing the metal end stops should be ⅝" diameter, not less than 1" long, with their centers ¾" from the finished wall line.

All holes, expansion score marks, or cracks should be repaired; and the concrete should be thoroughly dry before installing cove and base.

Installing End Stops and Corner Pieces

With Flash Type Cove and Base over wood subfloors, the felt is installed before the corner pieces and end stops, Fig. 88. The flange of the outside corner is cut into the felt so that the field is flush with the corner.

End stops and corner pieces should be installed with rosin-coated, flat-headed nails before the binding strip is installed. On plaster walls, the nails should be long enough to reach the studs back of the lath and plaster.

Fitting the Binding Strip

The binding strip should be nailed to the wall with flat-headed rosin-coated nails of suitable length, spaced at least every 6″ and driven through the middle of the nail hole slots.

The top of the binding strip should be flush with the tops of the corner pieces and end stops. The strip should be measured to make a neat, tight fit with these metal pieces, Fig. 85.

To obtain an accurate measurement, hold one end of the strip firmly in place against one of the corners or end stops. This end should be square and smooth. Where the other end meets the opposite corner or end stop, score the strip with a thin, sharp file, as shown in Fig. 85.

Never cut the strip with one snip of the shears; this will crush the over-hanging bead. Instead, hold the strip so that the over-hanging bead faces you, and score the ridge deeply at the mark with a file, as shown in Fig. 86. With a gentle backward

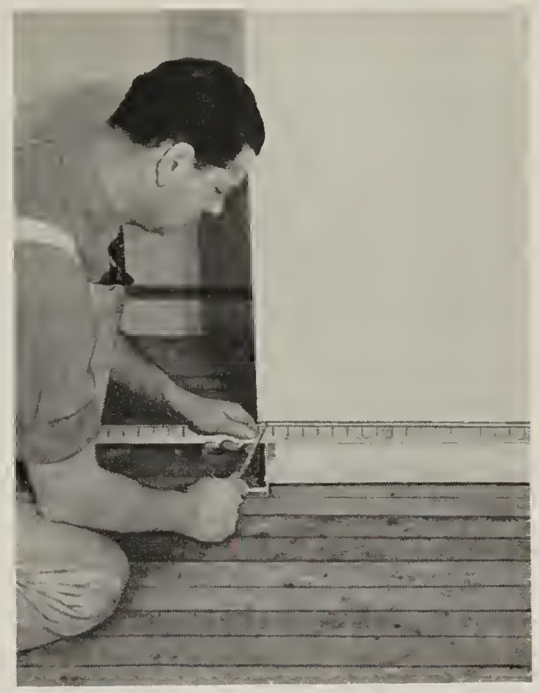


Fig. 85—*Holding the binding strip firmly in place, score the measurement with a thin, sharp file, as shown.*

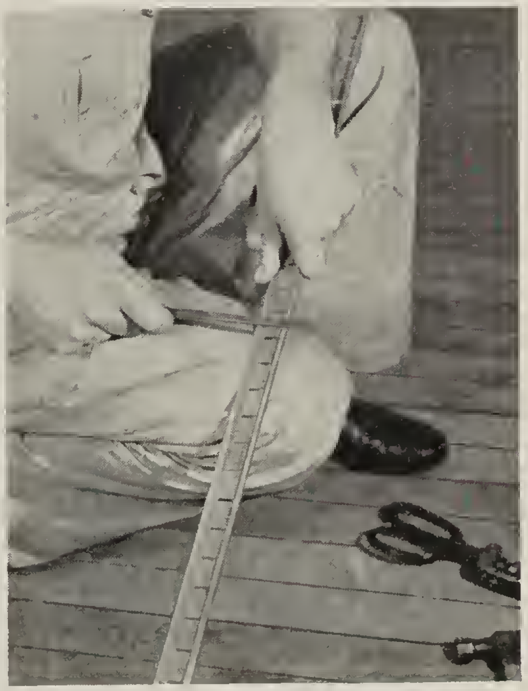


Fig. 86—*To avoid crushing the over-hanging bead, first score the ridge deeply at the mark with a file.*

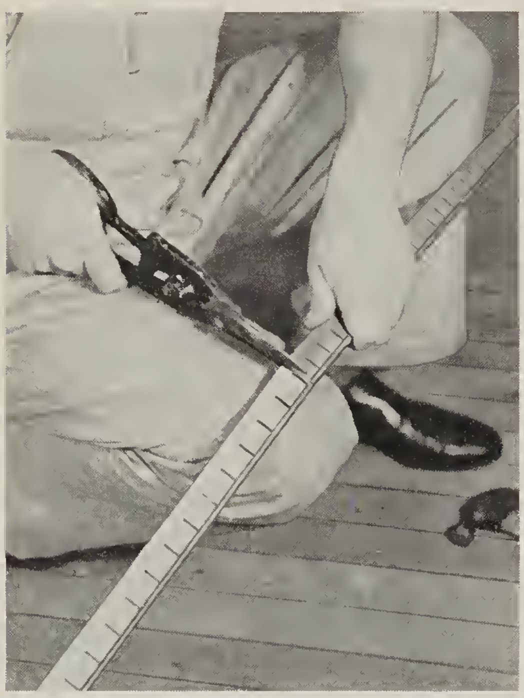


Fig. 87—*Snip the flange of the strip up to the break, and dress the edge with a file to remove all burrs.*

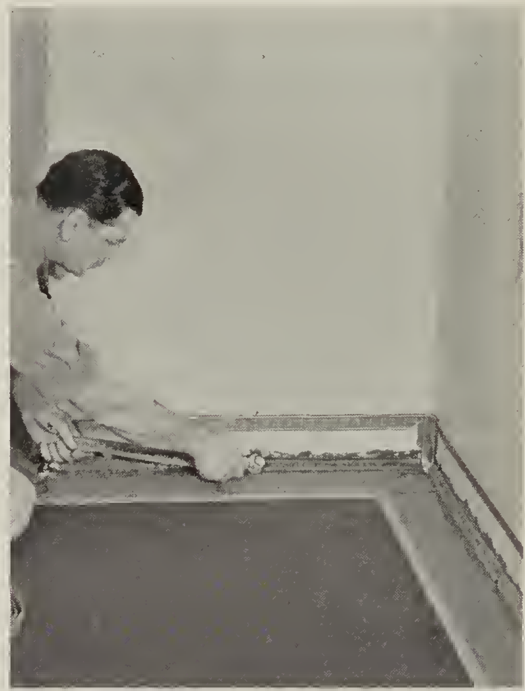


Fig. 88—*With end stops or corner pieces placed, paste in the fillet and roll it to shape with the Fillet Forming Tool.*

movement, break the scored beading. Then snip the flange of the strip up to the break, as shown in Fig. 87, and dress the edge carefully with the file to remove all protruding burrs.

Installing the Fillet Strip

Armstrong's ¾″ Wax Fillet Strip is installed before or after the end stops or corner pieces are in place. See Fig. 88.

On concrete or other floors where lining felt is not used, the fillet is pasted to the floor and wall with linoleum paste.

On wood subfloors, where lining felt must be used, the fillet is pasted to the wall and to the top of the lining felt. This detail is clearly illustrated in Fig. 83.

After pasting, the fillet is rolled to shape with Armstrong's Fillet Forming Tool, as shown in Fig. 88. Then the coved linoleum is installed by pattern scribing, as follows:

Pattern Scribing

1. On the felt, strike chalk lines parallel to the walls. The distance of these lines from the walls should be equal to the width of the border desired.

2. Before spreading paste on the felt for the main area of the floor, square all edges of the field linoleum. Then spread paste

over the area bounded by the chalk lines, and paste down the field linoleum, matching its edges to the chalk lines accurately. If a Linostrip is used, it should be pasted in place at this time.

3. To make a pattern for scribing, square one edge of a piece of lining felt or heavy kraft paper. The width of the pattern should be roughly equal to the width of the border plus the height of the cove. If an outside corner is to be fitted, allow excess paper as shown at the left of Fig. 89. (This excess paper, when scribed onto the linoleum, provides an overlap in the linoleum so that a mitred joint can be cut at the outside corner.)

4. Butt the squared edge of this paper pattern against the squared edge of the field linoleum, as shown in Fig. 89; and curve the rest of it over the fillet strip and up to within 1/4" of the top of the binding strip.

5. Also fit the pattern roughly to the corner pieces and end stops. If the edge of the pattern is brought to within 1/4" of all metal parts, as shown in Fig. 89, this will be close enough. Anchor the pattern to the wall with thumb tacks to keep it from slipping during scribing.

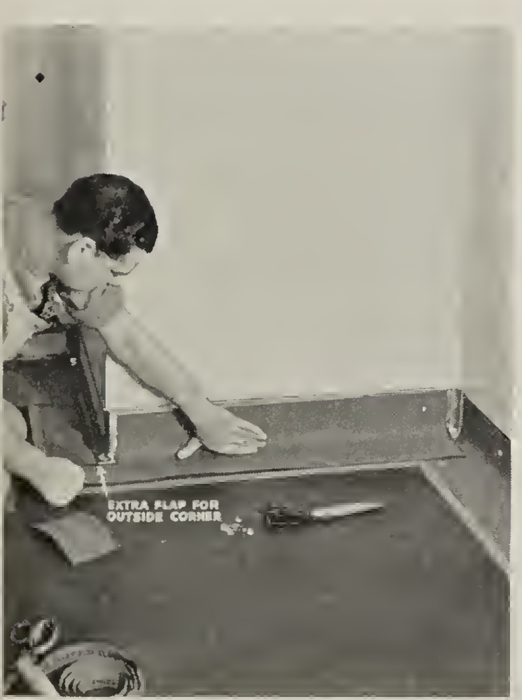


Fig. 89—*Butt the squared edge of the pattern against the squared edge of the field linoleum, and curve it over the fillet.*

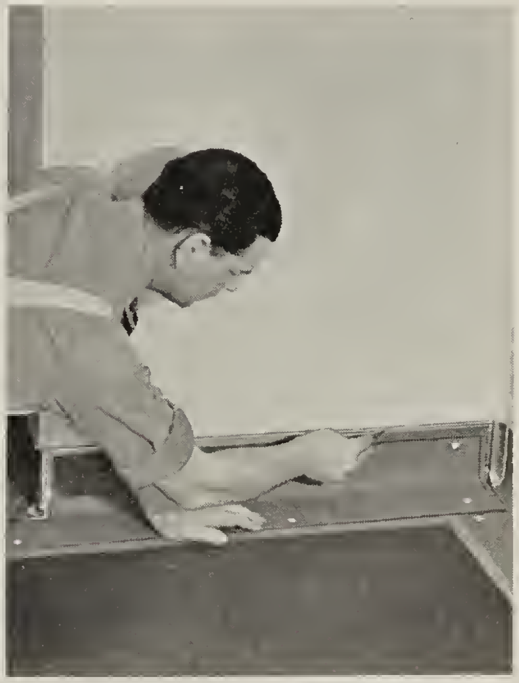


Fig. 90—*Fit the edge of the pattern within 1/4" of metal parts. With dividers, scribe these parts on the pattern.*

6. Set the points of a pair of steel dividers about ½″ apart—so that when the one leg is placed against the lip of the binding strip, as in Fig. 90, the other leg will extend well over the edge of the paper pattern. With the dividers in this position, scribe a line on the paper pattern, using the binding strip as a guide. Scribe around the corner pieces (or end stops) in the same way.

7. Remove the scribed paper pattern and match its squared edge to a straight, true edge of a piece of linoleum of ample size and correct color to form the cove and base, as shown in Fig. 91. With the dividers unchanged (opened at ½″), and using the scribed lines on the paper pattern as a guide, transfer the scribed lines outlining the corner pieces onto the linoleum, as is illustrated in Fig. 91.

8. To allow for the overlap of the binding strip (or end stops, if the latter are used), open the dividers an additional ⅛″. With the dividers set at ⅝″, scribe the lines for these metal parts.

9. Cut the linoleum carefully along the scribed lines to the required shape, as shown in Fig. 92. At points where the linoleum will fit into an outside corner,

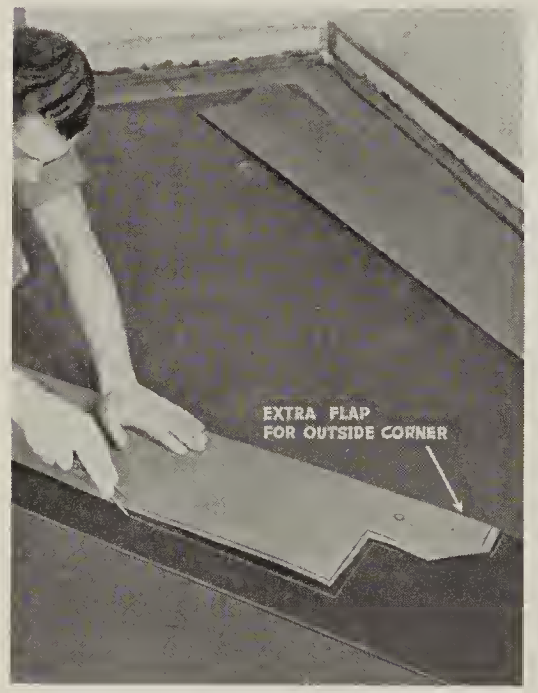


Fig. 91—*Using the pattern and dividers, transfer the scribed outline of the metal parts to the linoleum.*

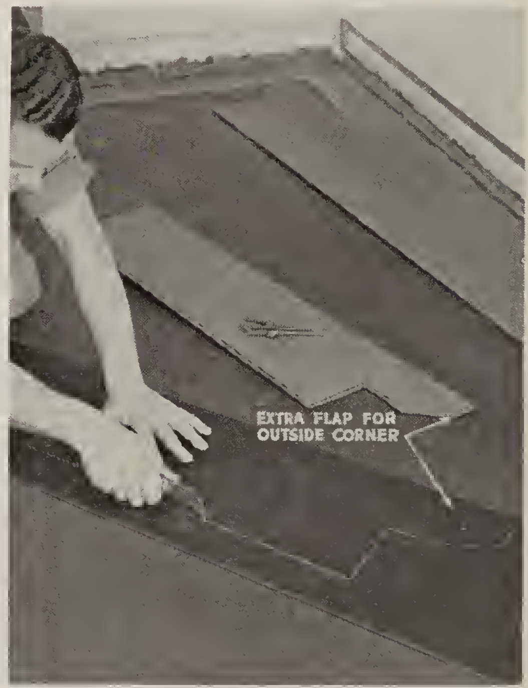


Fig. 92—*Cut the linoleum along scribed lines, allowing a flap for a mitred corner joint where necessary.*

allow the extra flap for cutting a mitred joint, as shown in Fig. 92.

10. When the linoleum has been cut, apply Armstrong's Linoleum Paste to the lining felt, fillet strip, and wall.

11. Pre-form the linoleum to approximately the contour of the cove by curving it and shaping with the hand, so that it will be easier to install.

12. Line the ends with the metal end stops or corner pieces. Force the piece against the wall and fillet with the corner forming tool, as shown in Fig. 93, so that the free edge is butted against, and flush with, the field linoleum. Then slide the top under the binding strip. It is highly important that a tight bond between the fillet and the linoleum be obtained.

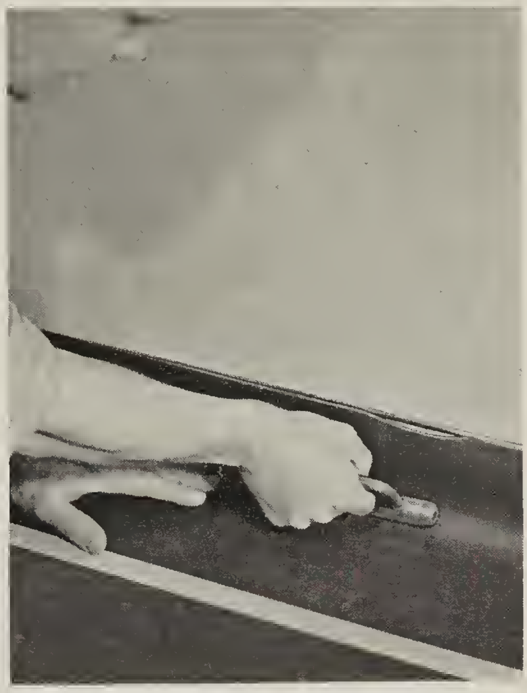


FIG. 93—*Force the linoleum under the binding strip and press it against the fillet with the Corner Forming Tool.*

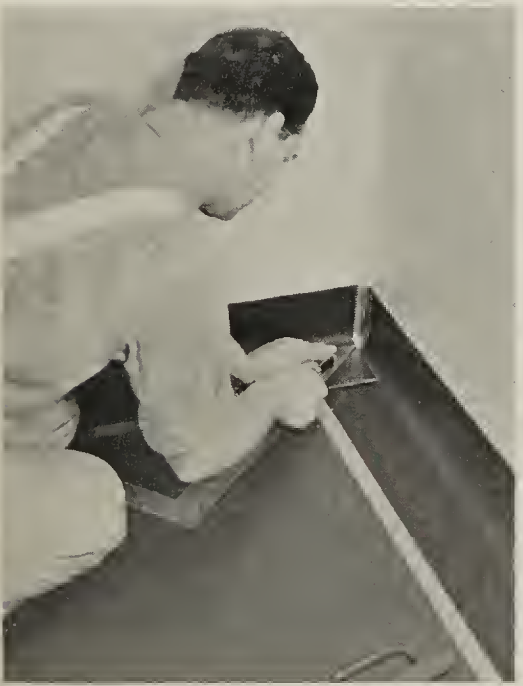


FIG. 94—*In making a mitred corner, cut through the top piece and deep enough to score the under piece.*

13. Use a square in cutting the mitred corner. With a linoleum knife, cut through the top piece just enough to score the piece it overlaps. Then cut the under piece. See Fig. 94.

14. With a linoleum roller, roll that part of the cove and base which is to form the border of the floor. In rolling, take care that the edge of the roller is not allowed to ride the curve, as this may damage both the linoleum and the fillet.

15. In small rooms, the entire cove and base can be fitted before the paste is applied to the walls. In large rooms, the sections should be pasted into place as soon as they are cut.

Rubber Cove Base and Plinth

Where customers prefer a rubber cove base, Armstrong-Stedman Rubber Cove Base can be easily installed. Three types are available, as shown in Fig. 95.

1. SANITARY TYPE: This is made in 2″, 4″, 6″, and 8″ heights with inside and outside angles and right or left ends. The pieces are ¼″ thick vertically and can be ordered to fit ⅛″, 3/16″, or ¼″ flooring. Sections are 24″ long.

A flexible model of Sanitary Cove Base, in 4″ or 6″ heights only, has a 5/32″ vertical thickness.

A wood ground in the wall is required for installation. Both types are ½″ radius.

2. HOSPITAL TYPE: This is made in a 6″ height only, with right or left ends but no angles.

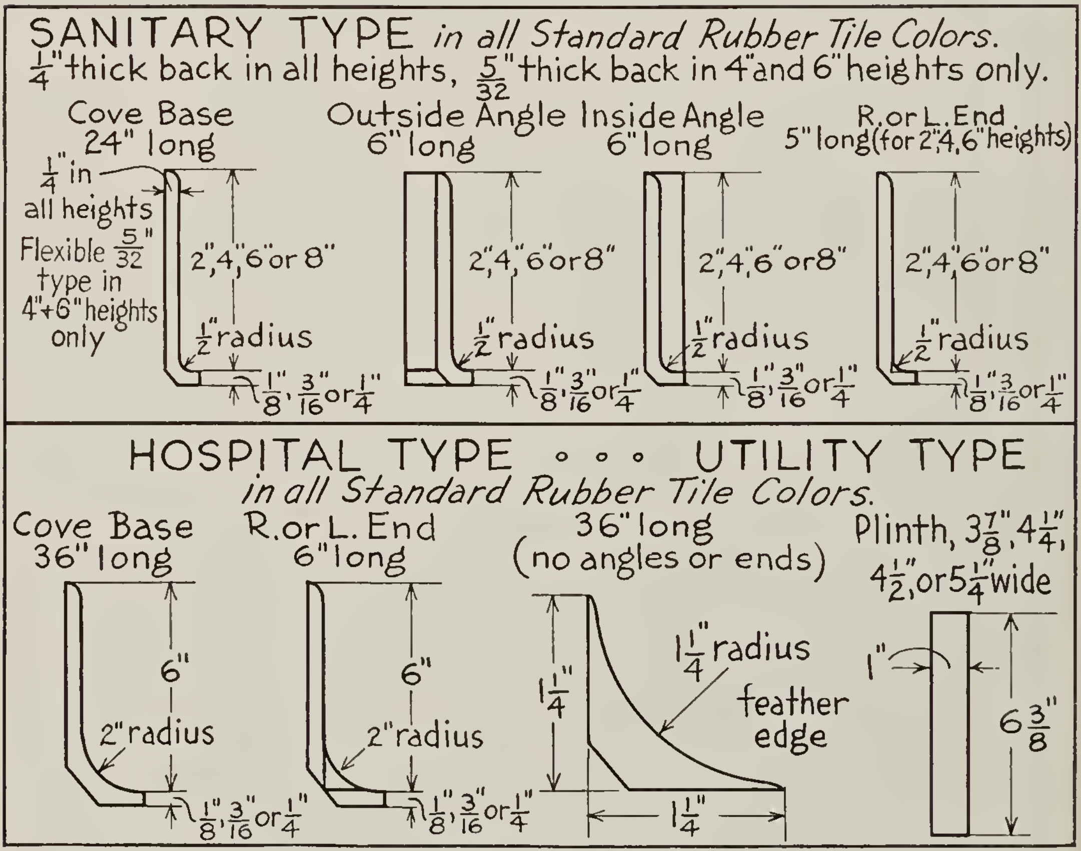


FIG. 95—*The Sanitary Type Rubber Cove Base has inside and outside angles, right or left ends. Hospital Type has right or left ends. Utility Type has no angles or ends. Rubber plinth blocks are available in several widths.*

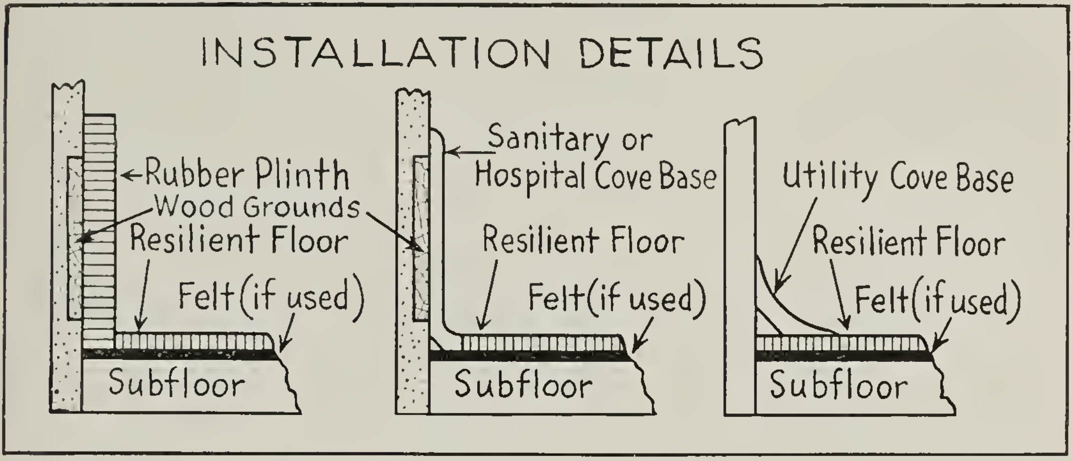


Fig. 96—*Wood grounds should be installed in walls where Sanitary or Hospital Type Cove Base or Rubber Plinth is used. The ground should be smooth and flush with the wall, 3″ wide, and set with its bottom edge ¼″ off the subfloor.*

It has a 2″ radius and can be supplied to fit ⅛″, 3/16″, or ¼″ flooring. A wood ground in the wall is required. Sections are 36″ long.

3. Utility Type: Made in 1¼″ radius, this type is 1¼″ high and can be installed without a wood ground. Sections are 36″ long, with no angles or ends.

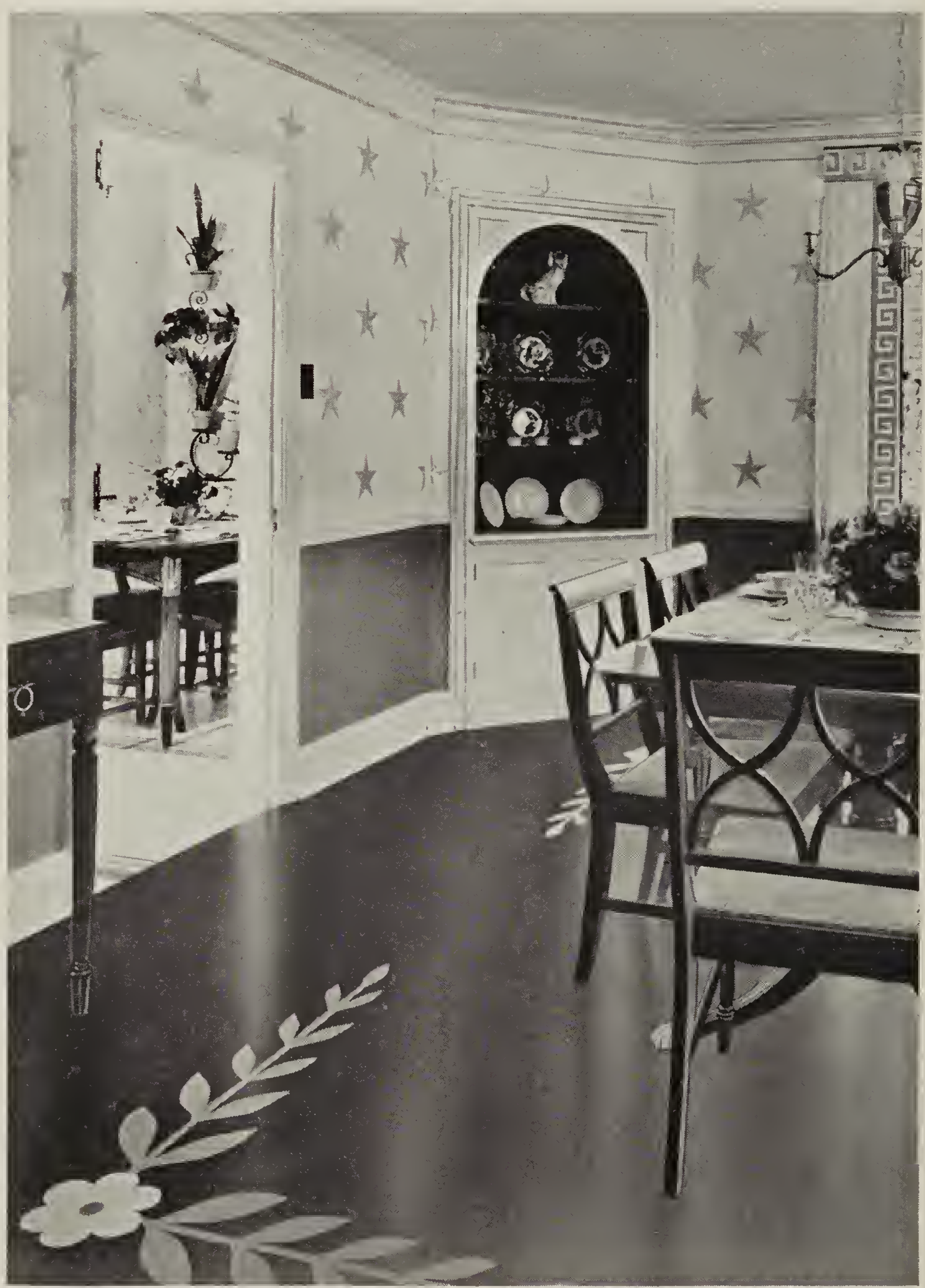
Plinth Blocks

A rubber plinth block, Fig. 95, is also supplied 1″ thick, 6⅜″ high, and 3⅞″, 4¼″, 4½″, or 5¼″ wide. It is installed over a wood ground in the wall.

Installation

Wood grounds of proper thickness should be installed in all walls where Sanitary Type or Hospital Type Cove Base or Rubber Plinth Block is to be used. The ground should be 3″ wide and set with its bottom edge ¼″ above the surface of the subfloor, as shown in Fig. 96. It should be smooth and flush with the wall. Plaster above and below the wood ground should be smooth and flush with its surface. The floor should be swept clean before installation.

All types of rubber cove base and the plinth block should be cemented to the wall and to the lining felt or subfloor with Armstrong's No. 236 Waterproof Cement. See Fig. 96.



Dining-room floors should always be in good taste. In the Lancaster Moderne Manor Model House, the field is of Chocolate No. 46 with white flowers and gray leaves.

CHAPTER TWELVE

Linoleum Stair Treads, Runners, and Edgings

Installations of linoleum on stairs fall into three types: (a) linoleum treads without risers; (b) separate linoleum treads and risers; and (c) linoleum treads flashed up to cover the riser in a one-piece construction.

Treads

1. Where a tread only is to be installed, fasten the metal or rubber nosing to the edge of the step, Fig. 97.

2. Paste a piece of lining felt from the flange of the nosing to the riser, Fig. 97. (In new buildings, the nosing may already have been installed with the flange recessed into the step. If so, the use of felt is not essential except where it is necessary to compensate for a difference in thickness.) If the stair is corrugated or badly worn, level it with Armstrong's Floor Fill before applying the nosing or felt.

3. Then cut a strip of linoleum 1″ longer than the tread and ½″ wider than the tread, Fig. 98. For instance, the linoleum for a tread 36″ long and 12″ wide would be 37″ x 12½″.

4. Square one long side of the linoleum and butt it against the riser, as shown in Fig. 98. The ends of the strip will flash up the stringer or railing.

5. Butt one edge of a square against the riser, and draw a line on the linoleum as shown in Fig. 98. Extend this line up the riser as shown.

6. Butt one of the squared narrow sides of the linoleum against the stringer, Fig. 99, so

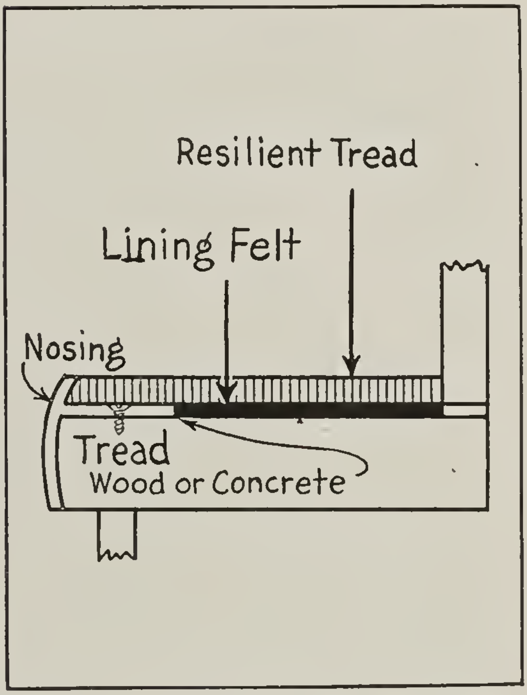


FIG. 97—*To install a stair tread, fasten the nosing to the edge of the step. Paste felt from the flange to riser.*

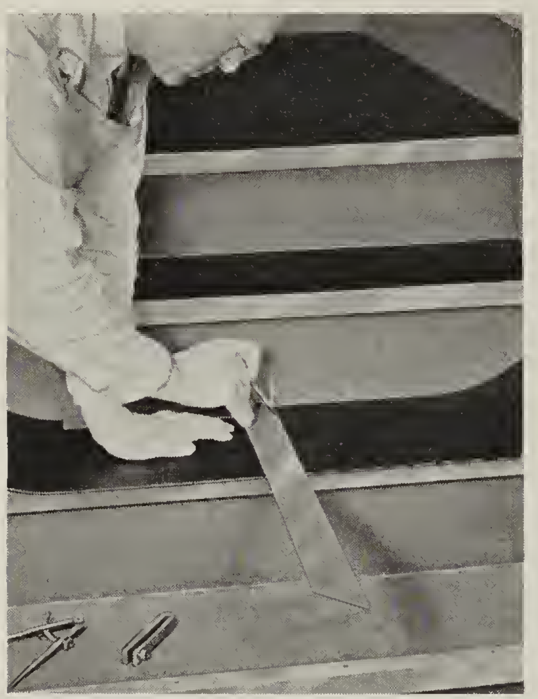


Fig. 98—*Butt a squared long edge of the strip to the riser. Using a square, strike lines on the strip and riser.*

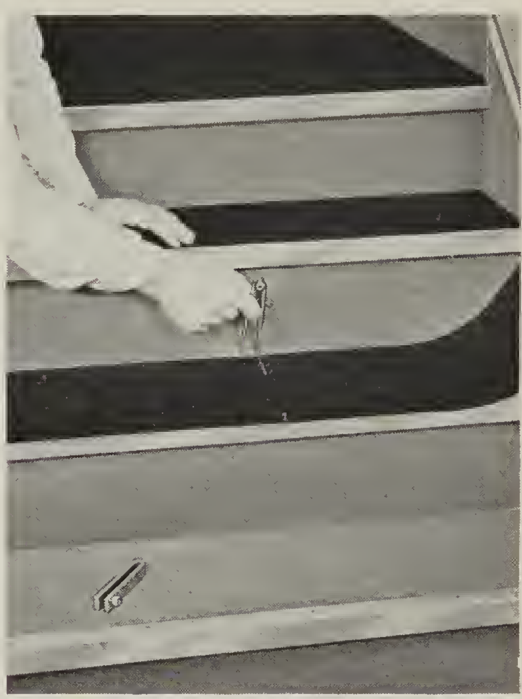


Fig. 99—*Butt one short edge to the stringer. Mark the goods where it meets the line on the riser.*

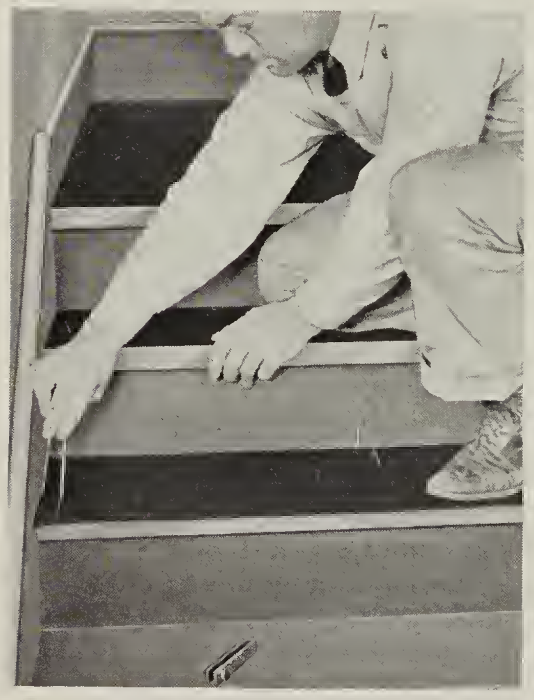


Fig. 100—*Scribe the contour of the stringer on the linoleum. Cut along the scribed line and check the fit.*

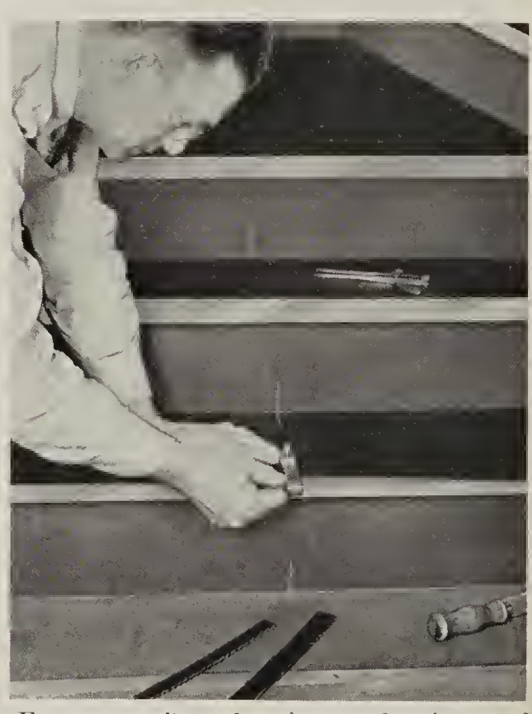


Fig. 101—*Butt the piece to the riser and sides. Scribe the contour of the nosing with the Recess Scribing Tool.*

that the other side flashes up the railing or opposite stringer, as in Fig. 99.

7. Set dividers to the distance between the mark on the linoleum and the mark on the riser, as shown in Fig. 99. With the dividers at this setting, scribe on the linoleum the contour of the stringer to which it is butted, as shown in Fig. 100. Then cut the linoleum along this scribed line and check its fit.

8. Butt the other end of the piece to the other stringer. Reset the dividers to the distance between the line on the linoleum and the line on the riser. Then, scribe and cut the piece to fit.

9. Butting the piece to the riser and two sides, insert the overhanging front edge in Armstrong's Recess Scribing Tool, as shown in Fig. 101. Press the wheel of the tool against the inside edge of the nosing, and scribe the contour of the nosing on the linoleum. Then cut the pieces along the scribed line, as shown in Fig. 102.

10. Repeat these operations in fitting each of the treads.

Two-Piece Tread and Riser

Where separate pieces of linoleum will be used on the tread and on the riser, cut and fit the tread as previously described.

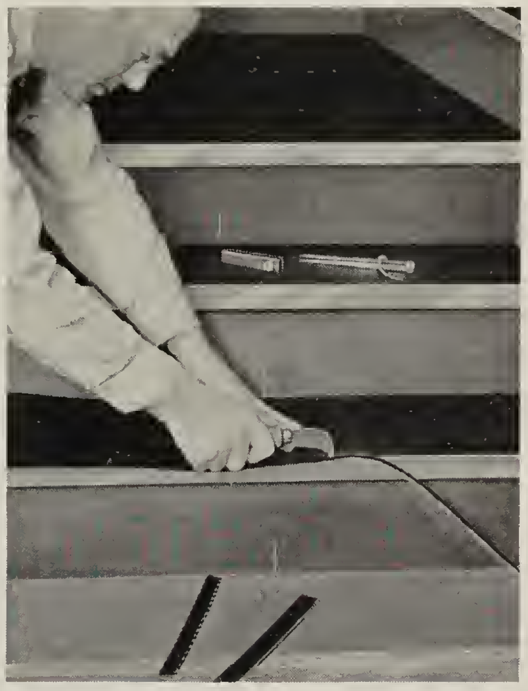


Fig. 102—*Holding the strip firmly butted to the riser, cut the strip along the scribed line of the nosing.*

The height of the riser strip should be the distance between the top of the linoleum tread and the underside of the tread on the next step. The piece can be cut to this dimension along a straightedge. The ends should be cut long and fitted in exactly the way the tread was fitted to the sides. No lining felt is necessary behind the linoleum riser.

One-Piece Flashed Tread and Riser

Where the linoleum of the tread is to be flashed up the riser in one piece to the next step, the construction resembles Flash Type Cove and Base. The operations are as follows:

1. Install the nosing at the front edge of the tread. Paste the felt on the tread as explained.

2. On top of the felt, paste Armstrong's ¾″ Fillet Strip at the junction of the riser and felt with Armstrong's Linoleum Paste. Shape the fillet with Armstrong's Fillet Forming Tool.

3. Using a scrap piece of felt or heavy wrapping paper, pattern scribe a piece of linoleum to fit from the bead of the nosing, over the fillet strip, and up to the under side of the tread on the step above. Paste the linoleum in place, forcing it tight against the fillet with Armstrong's Inside Corner Forming Tool. Then roll it thoroughly with Armstrong's Linowall Seam Roller, which is small enough for this type of work.

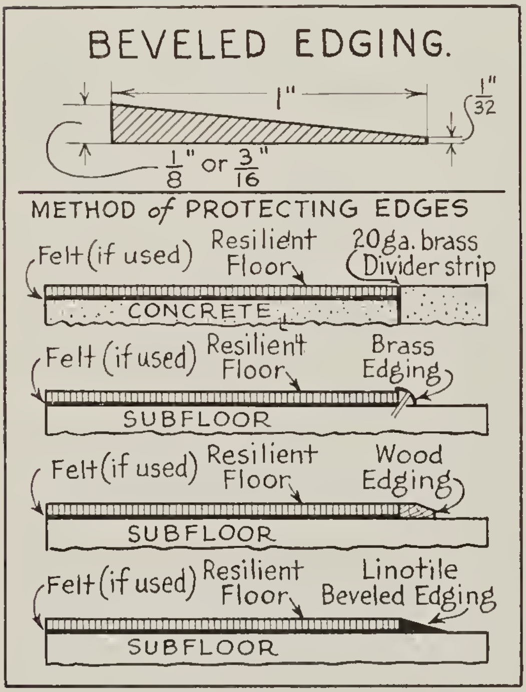


Fig. 103—*In laying linoleum runners, use Armstrong's Beveled Edging to prevent breaking at the edges.*

The method of pattern scribing is essentially the same as for Flash Type Cove and Base, as explained in Chapter XI.

Adhesives

On wood or concrete treads, use Armstrong's Linoleum Paste. On metal treads, bond the lining felt to the metal with Armstrong's No. 210 Rustproof Cement; and paste the linoleum to the felt with linoleum paste. If the linoleum is bonded direct to metal, use the rustproof cement.

Linoleum Runners

In laying a single width of linoleum as a runner in a corridor, church aisle, or hallway, the general directions for laying linoleum should be followed. If the floor is wood, the linoleum runner should be pasted over lining felt. On suspended concrete, linoleum runners may be pasted without felt.

After pasting, the edges of the runner must be protected with beveled edging, Fig. 103, which also is pasted in place.

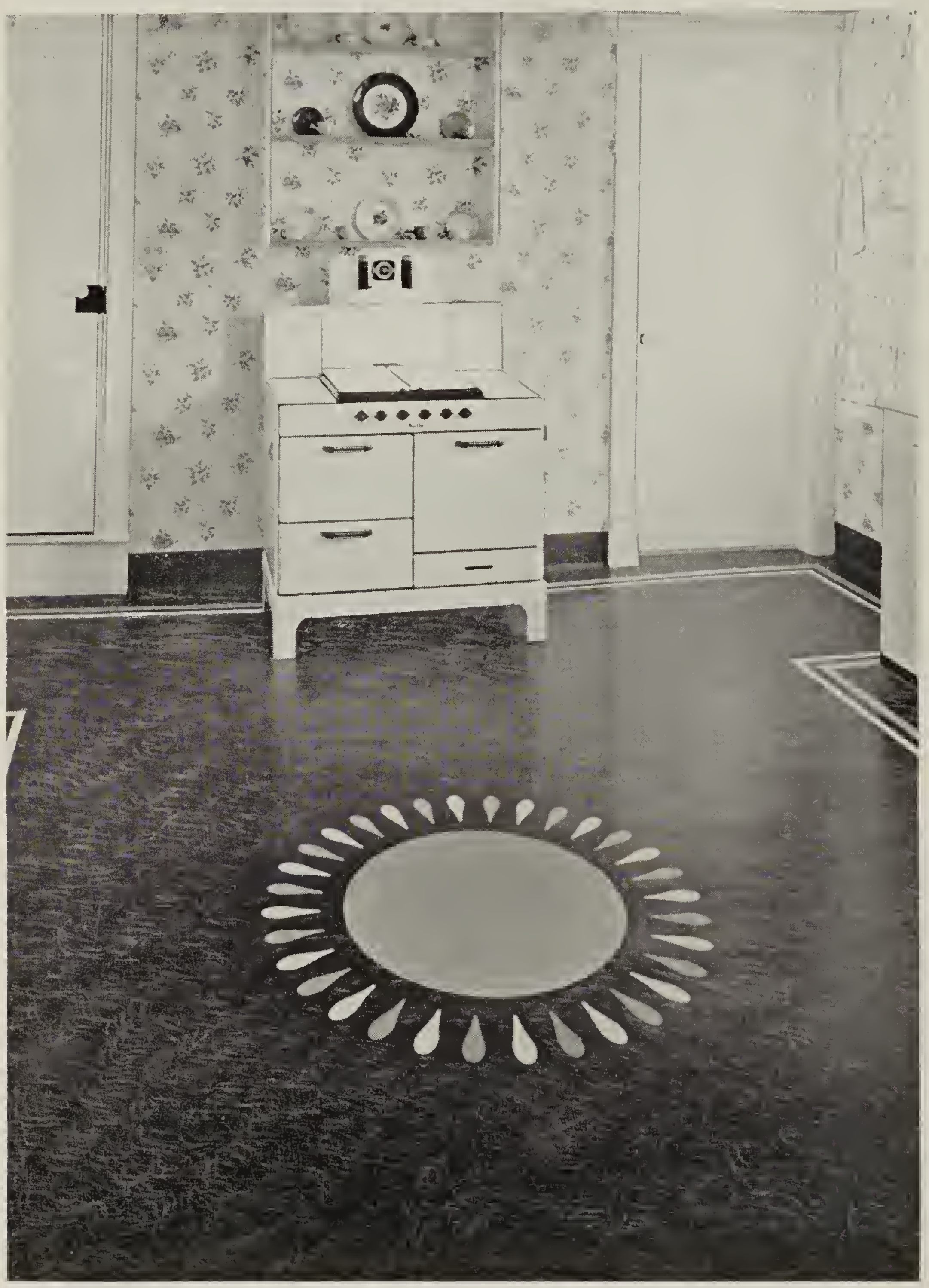
Beveled Edging

Armstrong's Beveled Edging is furnished in strips 1″ wide and

36″ long, ⅛″ or 3⁄16″ thick at one edge and tapering to approximately 1⁄32″ at the other edge. Several colors are available.

Armstrong's Beveled Edging is also used for finishing edges at doorways where the linoleum does not extend into the next room, as illustrated in Fig. 22.

Under no circumstances should the edges of a runner be left unprotected because traffic soon breaks the edges. Wood or metal edgings also may be installed by the various methods illustrated in Fig. 103 on the opposite page.



Kitchens may be made to appear as artistic as any room in the house. This inset of chartreuse with leaves of chartreuse and white helps break the sweep of the field.

CHAPTER THIRTEEN

Linoleum on Sink Tops

When installing linoleum on sink tops, it is highly important that *all* joinings be made absolutely water-tight, so that moisture cannot work its way under the linoleum and loosen the paste or cement. Good construction at the basin requires:

(a) The right type of metal pan and metal edgings

(b) Extremely careful fitting of the linoleum

(c) The use of rustproof adhesive and Armstrong's Sink-Top Lining

(d) The use of rustproof metal edgings that will not readily spring or bend out of position when bumped.

Many types of edgings and basins are on the market. The manufacturers of most of these items recommend a particular style of construction for use with linoleum.

The names of firms making metal edgings will be furnished upon request. It is also suggested that mechanics write for Armstrong's "Sink-Top Portfolio," which consists of drawings supplied by various metal manufacturers showing the recommended construction with their types of edging.

The method described here merely suggests the general steps of installing the linoleum on the sink surface and flashing it up the wall. A common type of basin and edging strip for the front of the sink is used. The metal binding strip that is attached to the wall, the end stops, the corner pieces, and the fillet strip are the same as are used with Armstrong's Flash Type Cove and Base. The steps are as follows:

1. Following the directions of the manufacturers, install the metal edgings. These parts, whether recessed into the base or projecting above it, should be set into a film of Armstrong's No. 210 Rustproof Cement (or a dependable caulking compound) before they are finally screwed into position.

2. Cut a piece of Armstrong's Sink-Top Lining to fit neatly over the entire surface. Butt the lining to all flanges on the edgings. These flanges may be

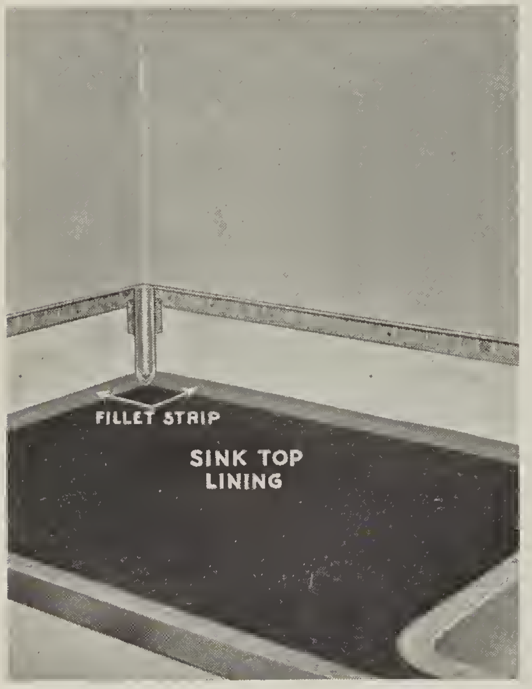


FIG. 104—*Sink-top lining is first fitted dry to the surface. Do not lap the lining over the metal flanges.*

square-edged or feather-edged; but in any case, do not lap the lining over the flanges, Fig. 104.

3. Remove the lining and spread Armstrong's Linoleum Paste over the base.

4. Lay the lining on the pasted base and roll it with a Linowall Roller. Then install Armstrong's ¾″ Fillet Strip on top of the lining at the wall line, as shown in Fig. 104. Shape the fillet strip by means of Armstrong's Fillet Forming Tool.

5. On the wall, install the metal binding strip and the corner pieces or end stops as explained in Chapter XI.

6. To make a pattern for pattern scribing, lay a piece of lining felt or a piece of heavy wrapping paper over the surface of the sink, flashing it up the wall to within ¼″ of the top of the binding strip, as shown in Fig. 105. The edges of the paper pattern should be about ¼″ from the edges of the corner pieces or end stops. Tack the pattern to the wall to prevent movement during scribing.

7. As shown on Fig. 105, scribe the pattern in exactly the same way as for Flash Type Cove and Base. With the dividers at ½″, scribe along the front metal edging.

8. Then at the rear-wall side of the basin, make slits in the pattern along the metal flange of the basin, as shown in Fig. 105 at the lower right.

9. Transfer all the scribed lines to the linoleum, as shown in Fig. 106, and as explained for Flash Type Cove and Base. Cut through the slits in the pattern, so that similar slits will be reproduced in the linoleum itself.

10. Cut the linoleum along all the scribed lines.

11. Spread a 4″ section of Armstrong's No. 210 Rustproof Cement on all parts of the lining that are adjacent to the flanges

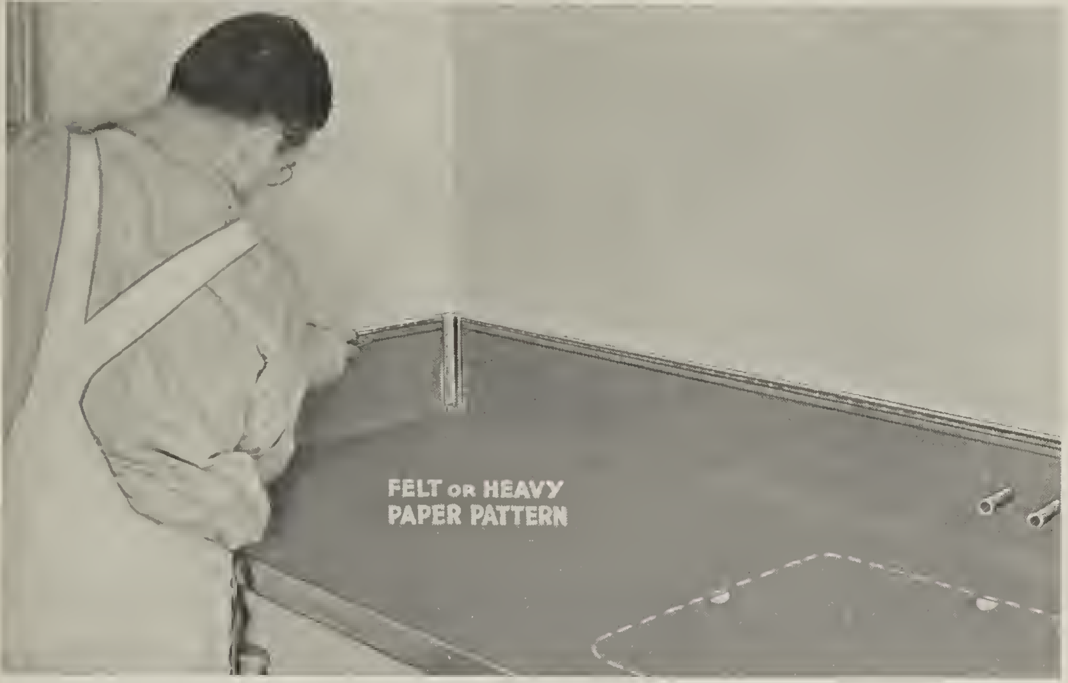


FIG. 105—*Lay a piece of felt or heavy paper over the sink-top lining as a pattern. Tack the pattern to the wall. With dividers set at ½", scribe along the front edging. Cut small slots in the pattern around the basin flange.*

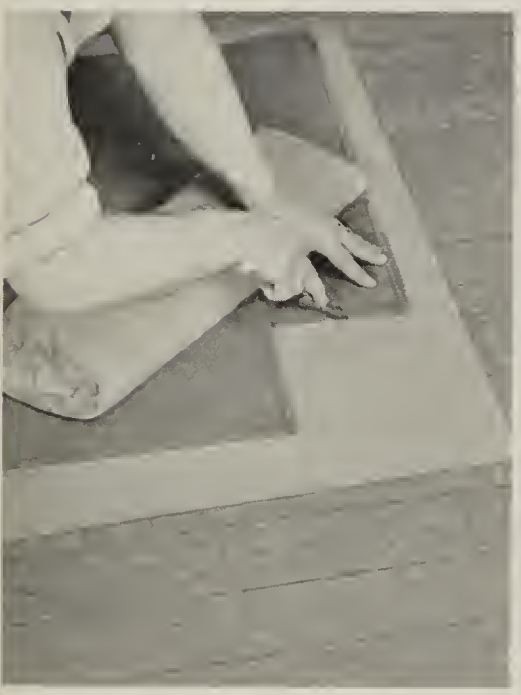


FIG. 106—*Transfer scribed lines to linoleum. Through slit in pattern, cut a slit in linoleum. Cut scribed lines.*

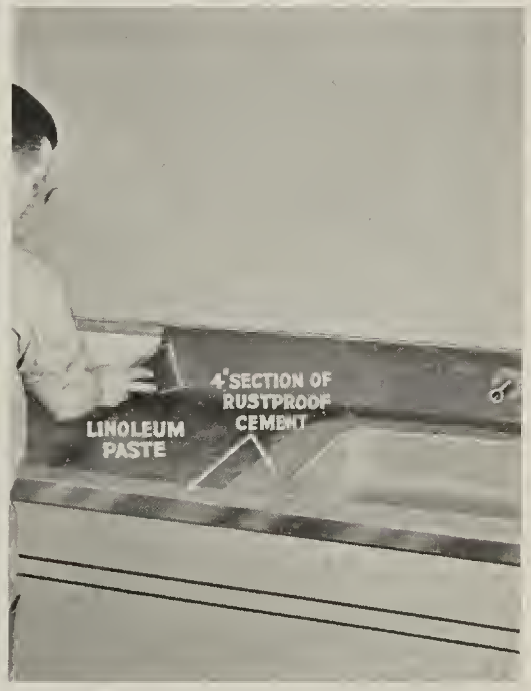


FIG. 107—*Spread 4" margin of Rustproof Cement next to, and over, the metal parts. Use linoleum paste elsewhere.*

of the basin and edging, as shown in Fig. 107. Spread the cement over these flanges. Over the rest of the lining, spread Armstrong's Linoleum Paste. Spread paste on the wall also, Fig. 107.

Do not allow the cement and the paste to overlap, because this will prevent a good bond, since cement and paste do not mix.

12. Allow the No. 210 Cement to set up 20 to 30 minutes and break the thin seum with a metal roller or notched putty knife. Lay the linoleum on the pasted surface. Butt it to the edging and corner pieces. By buckling it, as shown in Fig. 108, force it under the flanges of the binding strip and end stops. Slip the slit in the linoleum over the flange at the rear of the basin, to prevent the coved goods from sliding out of position.

13. With the corner forming tool, press the linoleum firmly against the fillet strip.

14. With a linoleum knife, cut out the opening for the basin, as shown in Fig. 109, so that a small amount of it overlaps the edge of the basin.

15. Insert this overhang in Armstrong's Recess Scribing Tool, as shown in Fig. 109. With the wheel pressed against the lip

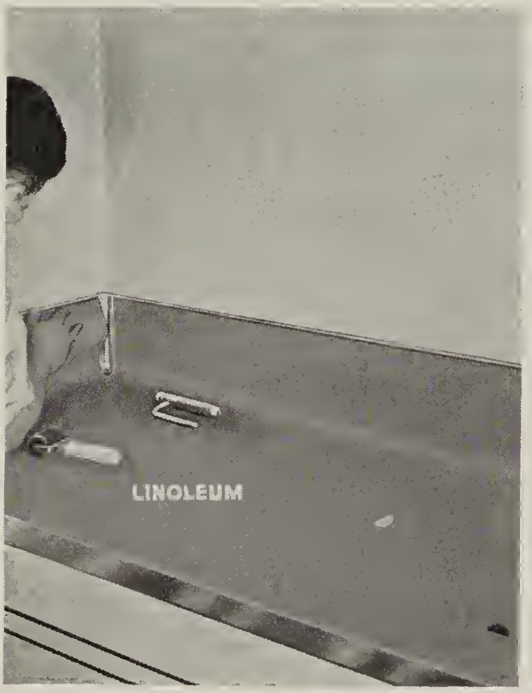


FIG. 108—*Buckle the linoleum under the binding strip. Force it against the fillet with corner forming tool.*

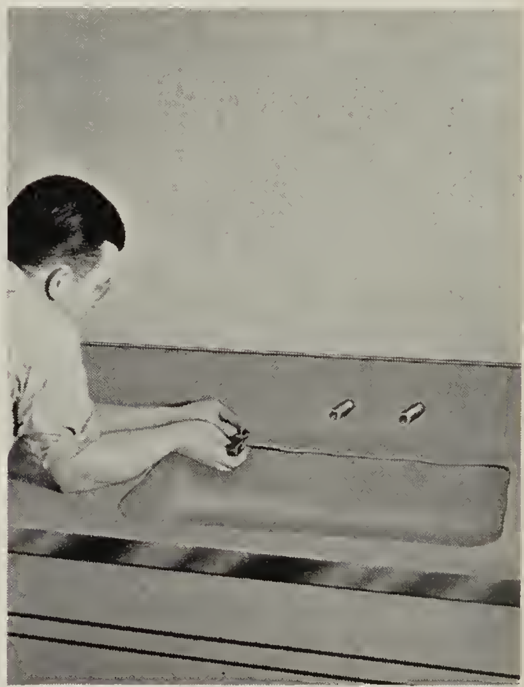


FIG. 109—*Cut the opening for the basin full, and insert the overhang in Armstrong's Recess Scribing Tool.*

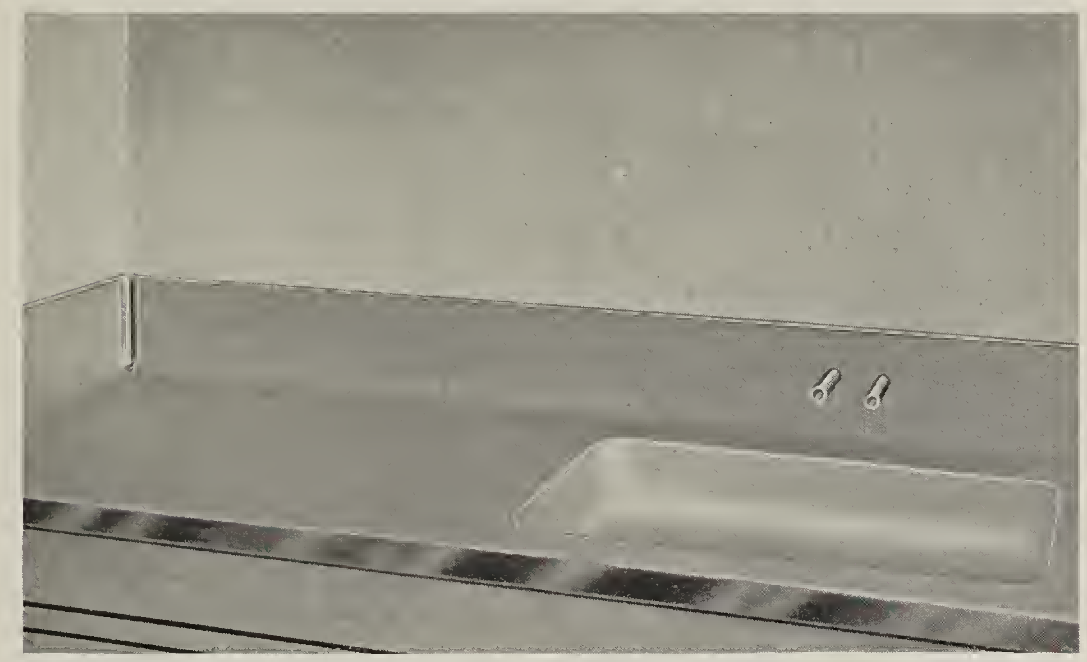


Fig. 110—*With the wheel of Armstrong's Recess Scribing Tool pressed against the lip of the metal nosing on the basin, scribe the linoleum and cut it carefully along the scribed lines. The finished job is shown in the illustration above.*

of the metal nosing on the basin, scribe the linoleum and cut it along the scribed lines.

Flashed without Binding Strip

Where the linoleum is flashed up the wall to butt to the bottom of a cabinet (metal binding strip not being used), the steps are the same as described above, except that the dividers are set at ½″ rather than ⅝″ when scribing for the top edge of the linoleum.

Flashed without Corner Pieces

If flashed construction higher than 6″ is desired, the metal corner pieces are not used. End stops may be used. If the height is greater than 6″, an end stop is used at the base and is extended by using metal binding strip above it. The method of installation is as follows:

1. Install the fillet strip and lining as previously described.

2. Then fit the felt or paper pattern so that it is about ¼″ short of the point where the back and side walls meet to form an inside corner, Fig. 111.

3. With the dividers at ½″, scribe the felt or paper pattern. At inside corners, keep the dividers at ½″. Press one leg of the dividers into the inside corner and place the other leg on the part of the felt or paper pattern

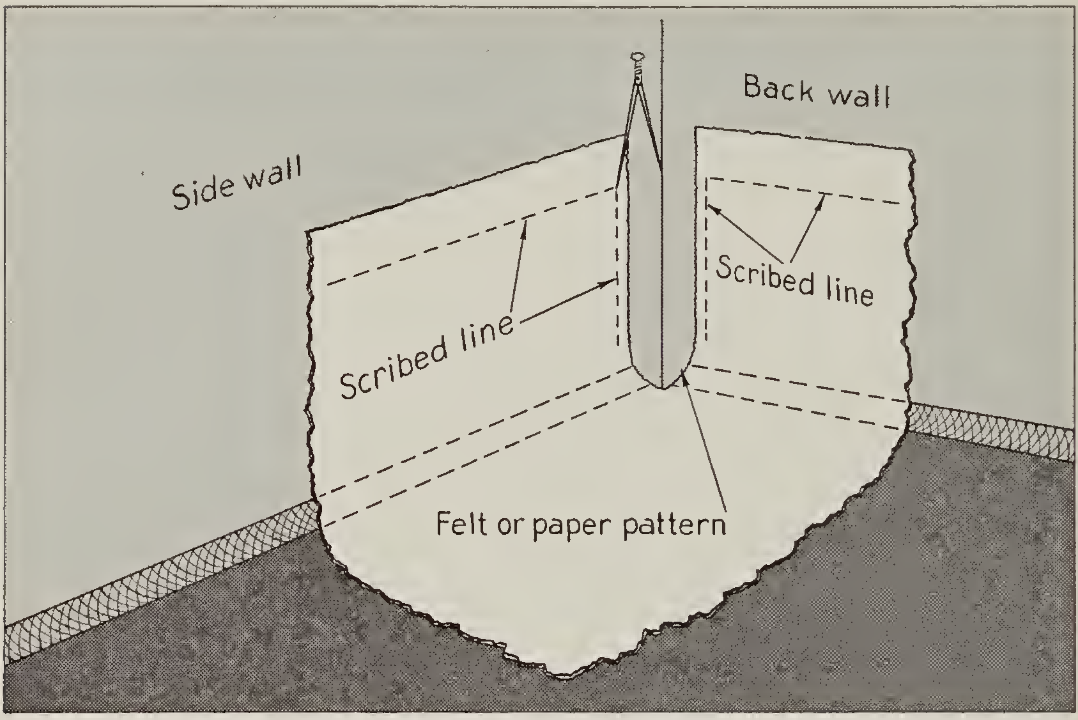


FIG. 111—*Fit the felt or paper ½" short of the juncture of walls. Set dividers at ½" and scribe corner line on the pattern. Reset to ½"-plus-the-thickness-of-the-linoleum. With one leg in corner, scribe the flap that flashes up the side wall.*

that flashes up the wall behind the sink.

4. Scribe the line of the corner on the pattern, carrying the leg of the dividers down to the top of the fillet strip. See Fig. 111.

5. So that the side piece of linoleum will overlap the back piece in the finished job, place a scrap of the linoleum against the

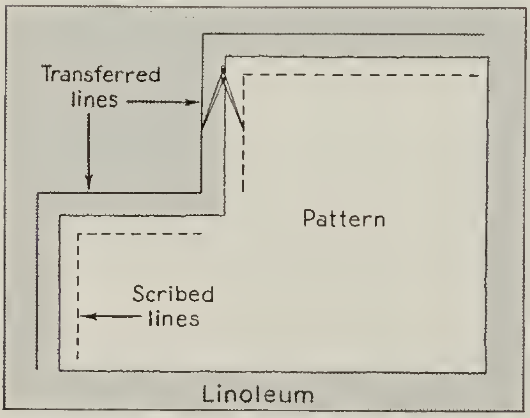


FIG. 112—*Place the pattern over the linoleum. With the dividers at ½", transfer scribed lines to the linoleum.*

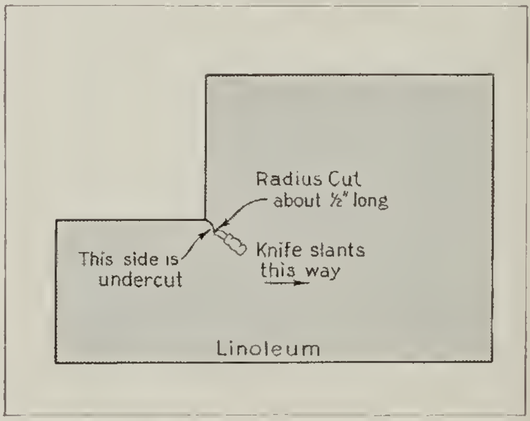


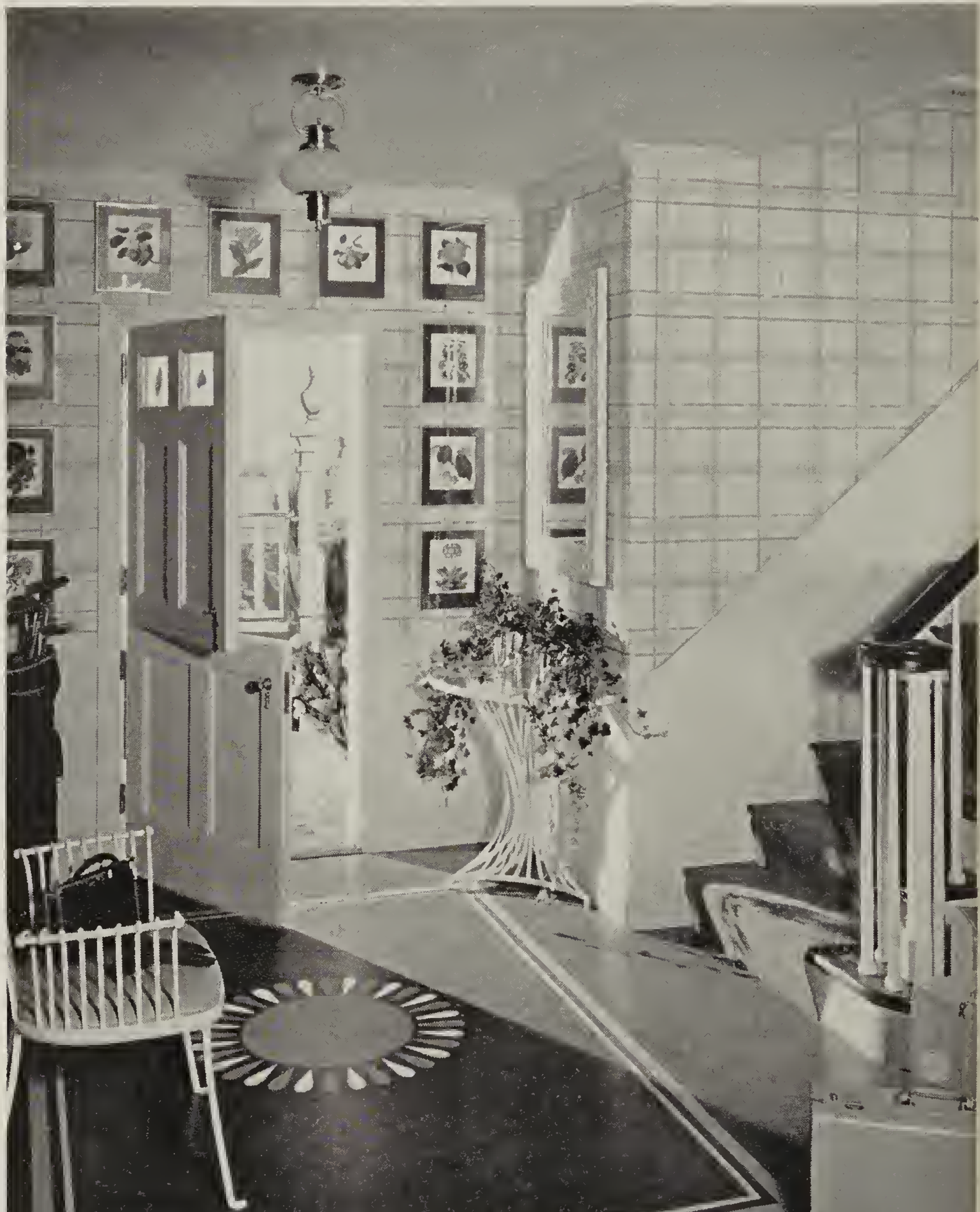
FIG. 113—*Where the two cuts meet, make a radius cut ½" long. Undercut the side piece so it will curve over fillet.*

back wall at the corner. With the dividers still at ½″, place one leg against the scrap in the corner. Place the other leg on the side flap of the pattern, and scribe this flap down to the top of the fillet strip.

6. Remove the pattern and place it over the linoleum. Then with the dividers set to ½″, transfer the scribe lines to the linoleum, as in Fig. 112.

7. Cut the linoleum along the scribed lines. Then where the two cuts meet at the corners, make a small radius cut about ½″ long, as shown in Fig. 113. The knife should be held so that the piece for the side is deeply undercut where it will curve over the fillet at the corner.

8. Place the linoleum in position on the sink top and wall. The radius cut will cause the side-wall linoleum to lap over the back-wall linoleum at the fillet, making a tight fit. If well done, this makes a neat joint.



"Honeymoon Hall," above, shows the possibilities of Custom-Craft die-cut floors. This room was especially designed by Armstrong's Bureau of Interior Decoration.

SECTION II

CHAPTER FOURTEEN

Types of Custom-Craft Floors

The first section of this book has been devoted to the more common linoleum jobs that constitute the bulk of the work a mechanic is called upon to do.

With the growing use of linoleum, however, a greater number of customers are demanding floors in which the linoleum is laid in individualized effects or with inset figures. Hence, the second section of this book is devoted to these subjects.

Particular attention is called to the many simple methods of producing custom floors through the use of the various devices offered as a part of Armstrong's Custom-Craft Floor Program. Except where extremely complicated floors are demanded, no longer is it necessary for the mechanic to possess exceptional skill in order to do such jobs.

Today, by using Armstrong's Ready-Cut Linosets, Dies, Custom Floor Cutter, Universal Scriber, or Projection Tracing, any mechanic of average ability can produce custom floors which, a few years ago, would have challenged the ability of the best mechanics in the country.

Since the basis of all successful custom-floor work is careful layout, the first chapter of this section is devoted to layout methods for the more common types of custom floors.

Types of Custom-Craft Floors

The means by which Armstrong's Custom-Craft Floors may be produced are:

1. Ready-Cut Linosets—These consist of designs cut by machine at the factory and shipped ready for installation as a unit. See Figs. 114 and 115. All the mechanic has to do is

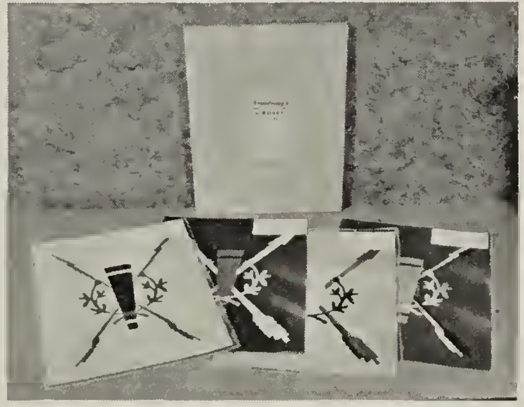


Fig. 114—*Armstrong's Ready-Cut Linosets are machine-cut designs shipped ready for easy installation as a unit.*

center the design and cut an opening in the field to receive the factory-assembled Linoset.

2. CUSTOM-CRAFT DIES—This outfit consists of ten metal dies, a hammer, pounding plate, and a carrying case, Fig. 116. The dies are made to cut common shapes—such as stars, circles, scrolls, etc.—into the

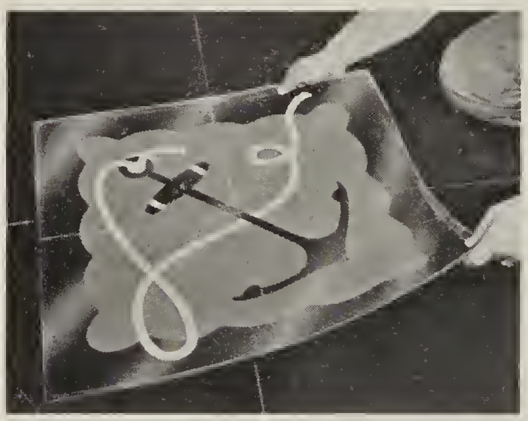


FIG. 115—*The design is centered and an opening cut in the field linoleum for the factory-assembled Linoset.*

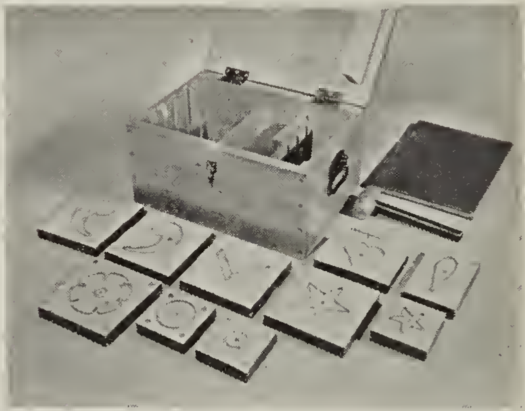


FIG. 116—*The Custom-Craft Die Outfit includes ten metal dies, a hammer, pounding plate, and carrying case.*

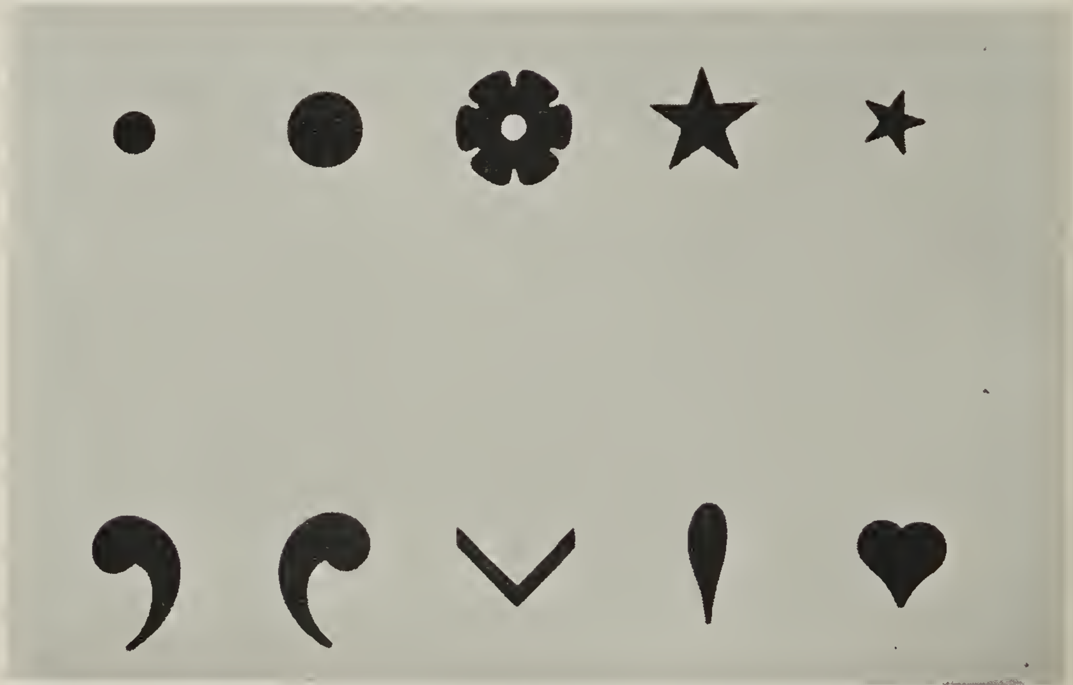


FIG. 117—*The Custom-Craft Dies are made to cut common shapes—such as stars, circles, scrolls, etc.—into the linoleum. They come in an assortment of ten basic shapes which may be attractively combined to create thousands of novel designs.*

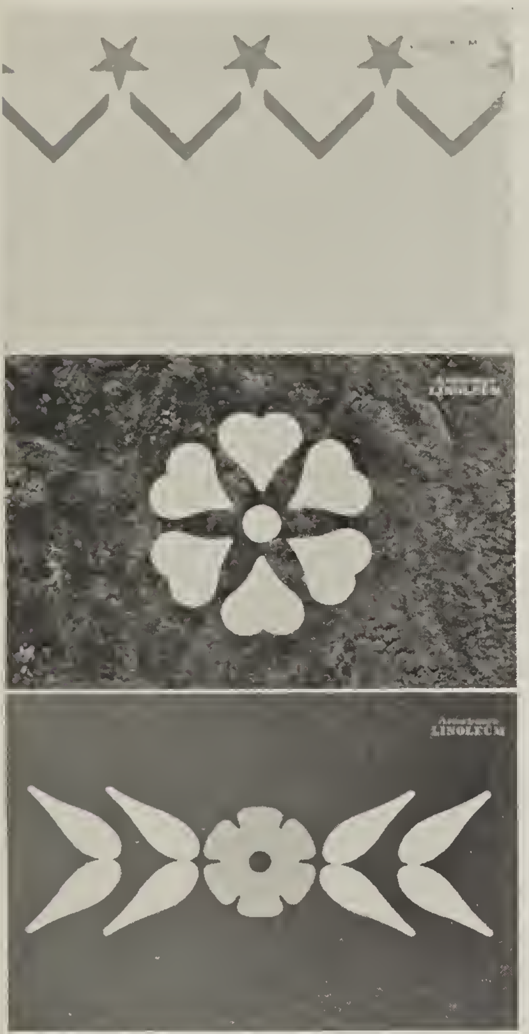


FIG. 118—*These designs illustrate a few effects achieved by combining the die-cut shapes shown in Fig. 117.*

linoleum. All the layer has to do is lay out the design on the field linoleum, and, by hammering the die, cut out the shapes. The available shapes are shown in Figs. 116 and 117. A few designs produced by combining these shapes are shown in Fig. 118.

3. CUSTOM FLOOR CUTTER OR UNIVERSAL SCRIBER—These ingenious tools, Figs. 119 and 170, simplify the cutting of any design consisting of circles, arcs, parallel lines, or any combination of these elements. The Custom Floor Cutter and Universal Scriber can be used for cutting borders and Linosets and for scribing. Any one who can use a compass or dividers accurately can operate these tools successfully. The Custom Floor Cutter is shown

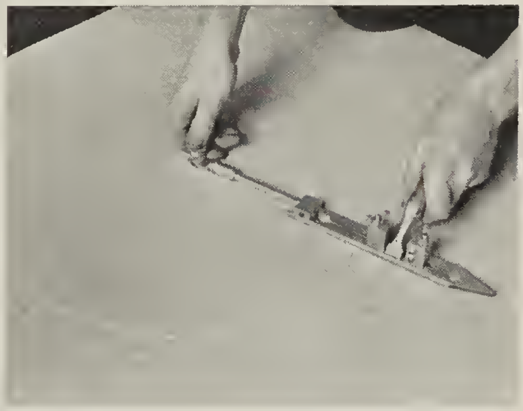


FIG. 119—*The New Universal Scriber simplifies the cutting of circles, arcs, parallel lines, or Linostrips.*

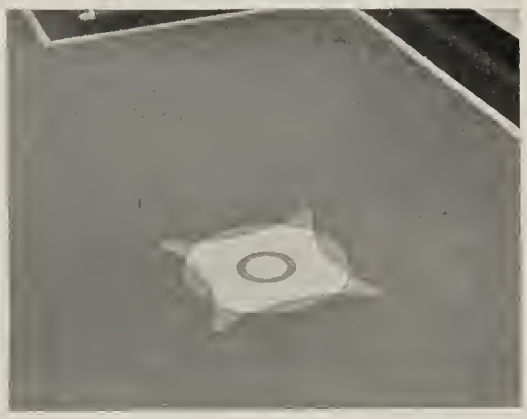


FIG. 120—*This Linoset is typical of the work produced with the Custom Floor Cutter or Universal Scriber.*

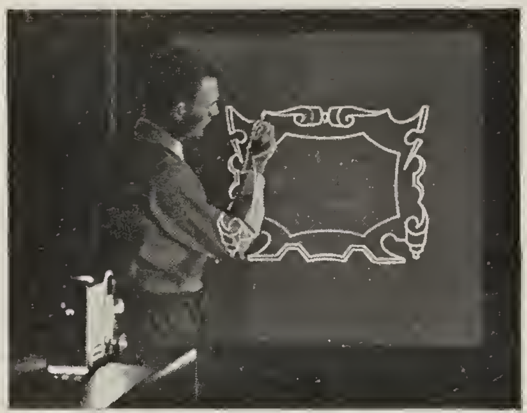


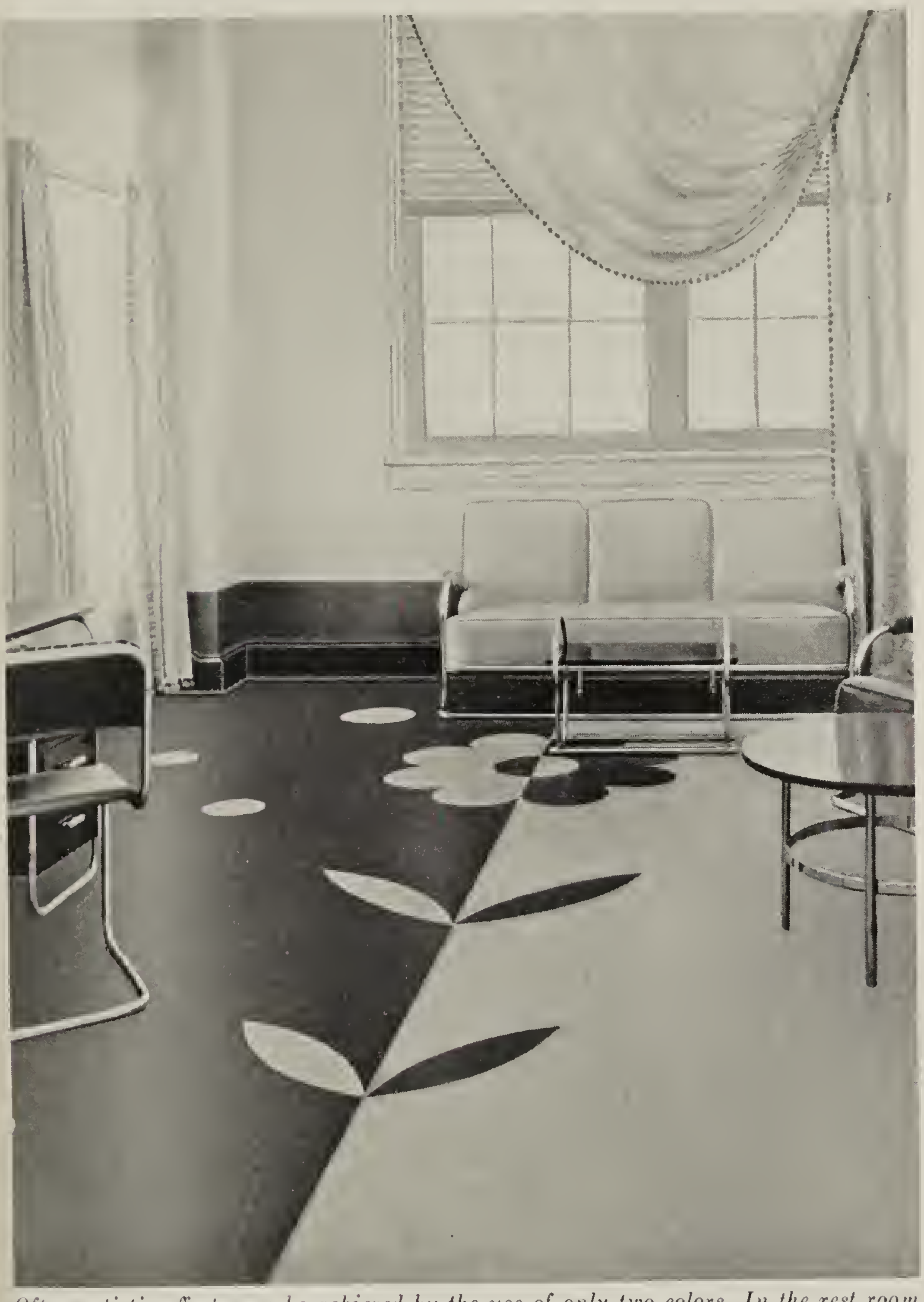
Fig. 121—*The design projected from Armstrong's Custom-Craft Projector is traced onto the linoleum with a pencil.*

in Fig. 170. A typical design produced with this handy device is shown in Fig. 120.

4. Projection Tracing—With the Armstrong Custom-Craft Projector, which uses a loop of 35-mm. motion picture film on which are 40 attractive designs, any one or any combination of these designs can be projected onto the linoleum in any desired size. The projected design is then traced onto the linoleum with a pencil, as shown in Fig. 121. Then the linoleum is cut exactly as a completely hand-cut design would be cut.

While calling for more skill than the other methods of making Linosets, projection tracing can be readily mastered by any experienced mechanic.

Directions for installing all types of Custom-Craft floors are given in the following chapters.



Often artistic effects can be achieved by the use of only two colors. In the rest room above, Yellow No. 48 and Silver Gray No. 26 were the only colors employed.

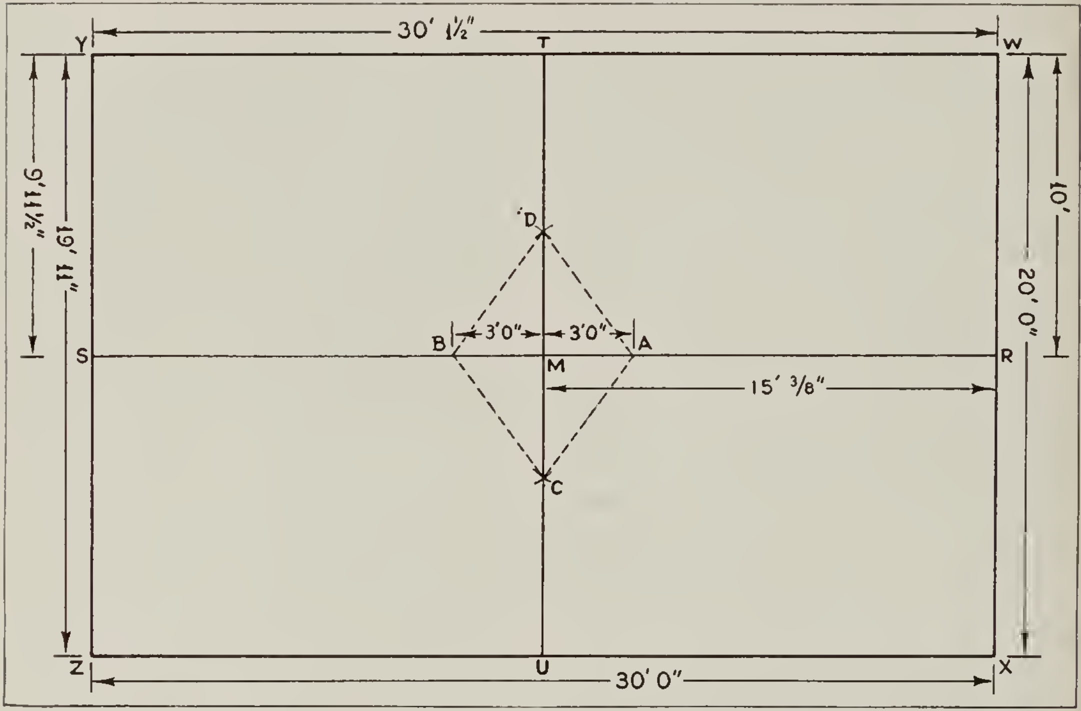


Fig. 122—*To find the center of a rectangular room with practically parallel sides, find mid-point M of the chalk line SR struck between the mid-points of walls YZ and WX. Square the room by striking the line TU at right angles to SR at M.*

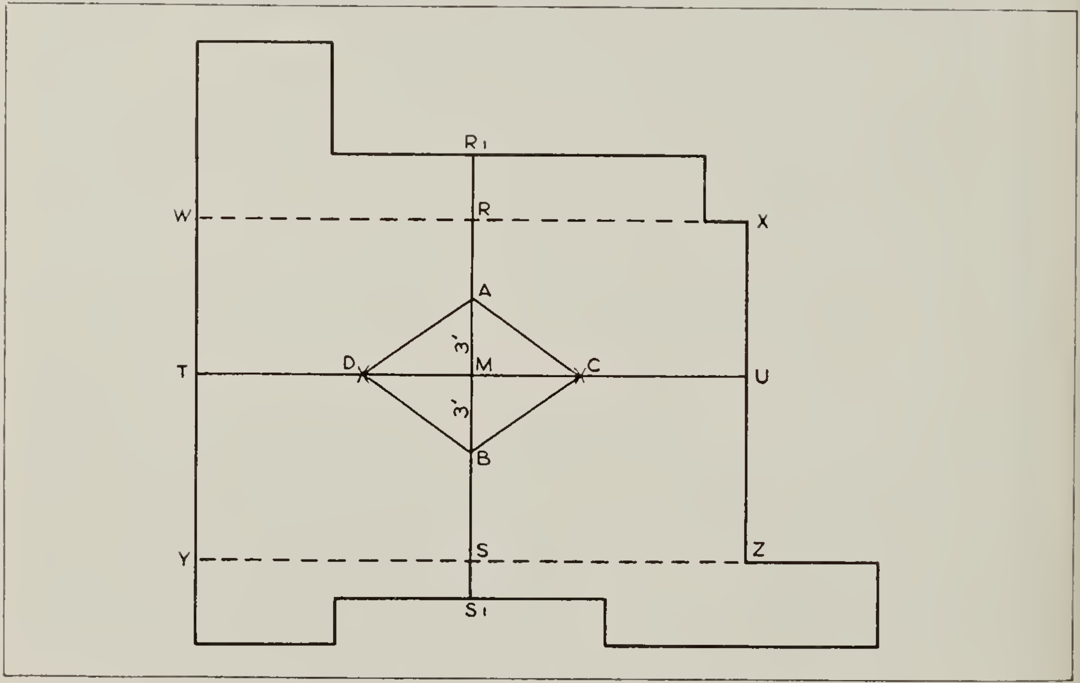


Fig. 123—*In rooms having bays and alcoves, the method illustrated in Fig. 122 is used again—except that centers R and S are found at the points shown in the diagram above. Then the point M is found midway between the points R1 and S1.*

CHAPTER FIFTEEN

How to Lay Out Custom-Craft Floors

The basis of all custom floor work is centering and squaring off the room. Figs. 122 to 128 will, if carefully studied, make it simple to perform the seemingly complicated operations.

Suppose you wish to find the center of a room that is rectangular with practically parallel walls on all sides. For instance, in Fig. 122, Wall *WX* is 20′; Wall *YZ* is 19′ 11″; Wall *XZ* is 30′; and Wall *WY* is 30′ 1½″.

2. Carefully measure across Wall *WX* and Wall *YZ* to find the mid-points at *R* and *S*. In this case, *R* is 10′ and *S* is 9′ 11½″. Strike a chalk line between *R* and *S* on the floor.

3. Next, find *M*, the mid-point of the line *RS*. At *M*, strike a line *TU* at right angles to *RS*. In this case, mid-point *M* is 15′ ⅜″ from *R* and *S*.

4. To make the line *TU* exactly at right angles to *RS*, proceed as follows:

(a) With *M* as a center and any convenient distance as a radius, draw an arc that cuts *RS* at *A* and *B*. (In this case, a convenient 3′ radius was used.)

(b) With *A* as a center and any distance greater than *AM* as a radius, draw an arc on both sides of *RS*.

(c) With *B* as a center and using the same radius, draw another arc on both sides of *RS*.

These arcs will cross each other at points *C* and *D*.

(d) Through points *C* and *D* and *M*, strike a chalk line to both long walls. This is the line *TU* and it is exactly at right angles to *RS*.

If carefully done, this method is more accurate than using a square to strike the right angle, especially in large rooms.

In rooms with bays or alcoves in the walls, as shown in Fig. 123, the method is the same—except that centers *R* and *S* are found at the points shown in Fig. 123. Then point *M* is found midway between *R1* and *S1*. Fig. 124 shows a method of squaring off a room where opposite walls are not parallel.

Irregular Rooms

To lay out a square field in a room shaped like the one in Fig. 125, the steps are as follows:

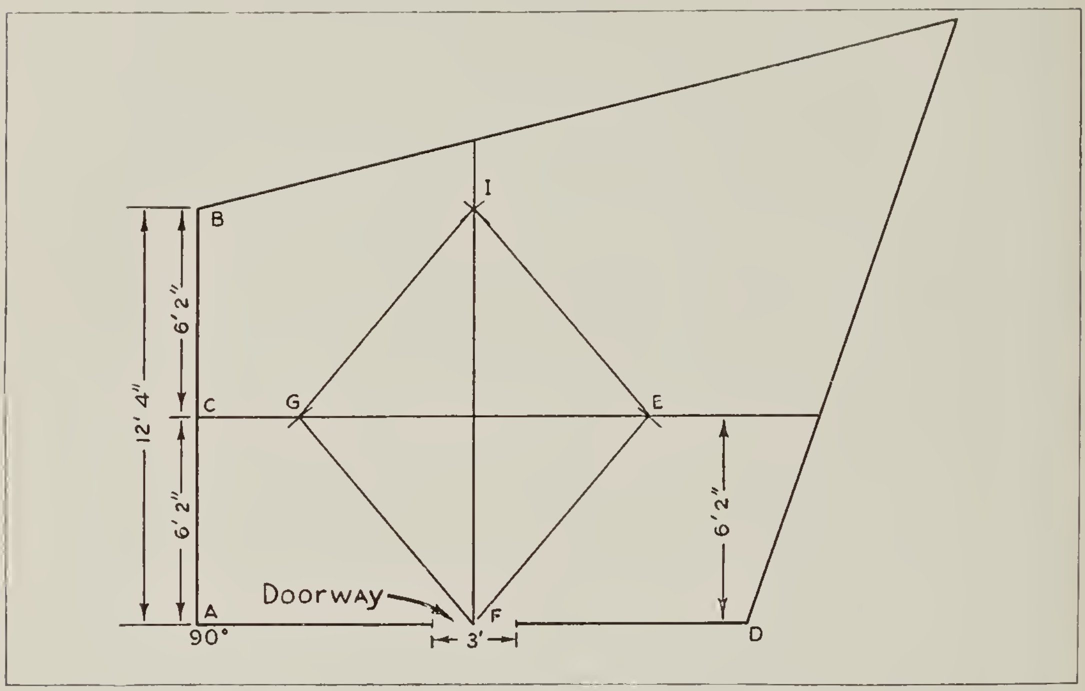


FIG. 124—*Here is a simple method of squaring off a room where the opposite walls are not parallel. Strike line CGE parallel to Wall AD at mid-point C of Wall AB. Find F, the mid-point of the doorway. From F, strike a line at right angles to CGE.*

1. Find *C*, the mid-point of Wall *AB* in Fig. 125.
2. On Wall *XY*, mark the point *Z* so that *ZY* equals *BC*.
3. Strike a line *ZC*; and find *D*, the mid-point of line *ZC*.
4. If, as in this example, a 15″ border is to be used at the short walls, mark points *E* and *F* on *ZC* 15″ from each wall.
5. At *E* and *F*, strike lines *IJ* and *GH* at right angles to *ZC*.
6. If 9″ borders are to be used along the long walls, mark points *L*, *K*, and *M* on lines *IJ* and *GH* 9″ from the long walls.
7. Strike parallel lines *LN* and *KM* at right angles to *IJ*.
8. Parallel to slanting wall *WX*, strike the line *OP*. The width of the border at this point should be an average of the two other border widths, or 12″ (9″ plus 15″ equals 24″, divided by 2 equals 12″).

Dot Designs

Where dots or other designs are to be inset in the floor at regular intervals, as shown in Fig. 128, strike center lines as previously explained; then draw lines parallel to them. The distance between parallel lines will depend upon the amount of spacing that is required between the centers of the designs.

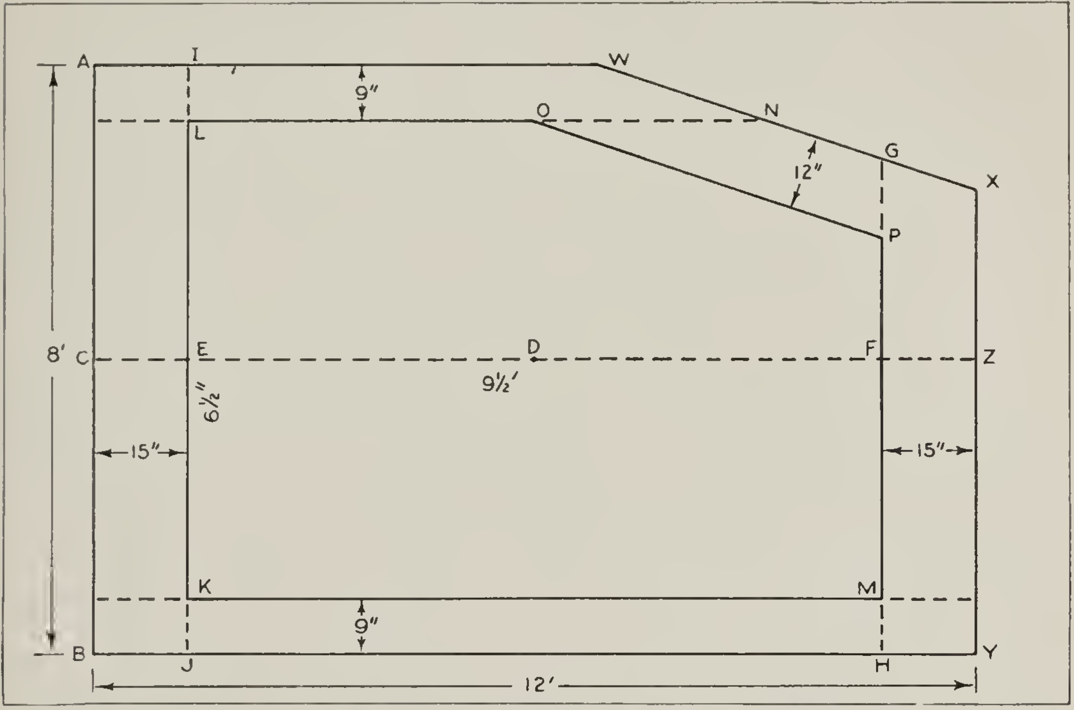


FIG. 125—*The diagram above shows the steps followed in laying out a square field and planning a border in an irregular-shaped room. The border of the slanting side WX is the average of the widths of the borders of the other two sides.*

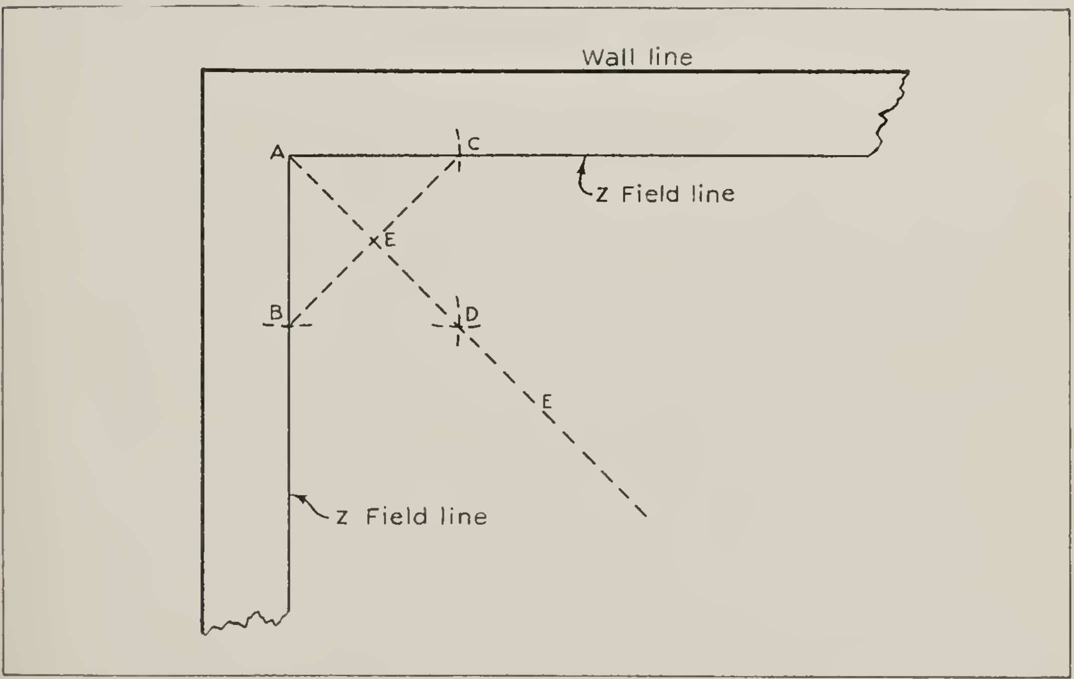


FIG. 126—*A Linoset used in each corner of a room should be placed along the line bisecting the inside angle. From the points B and C (equidistant from A) draw the intersecting arcs CD and BD. Then extend the line AD through the point D.*

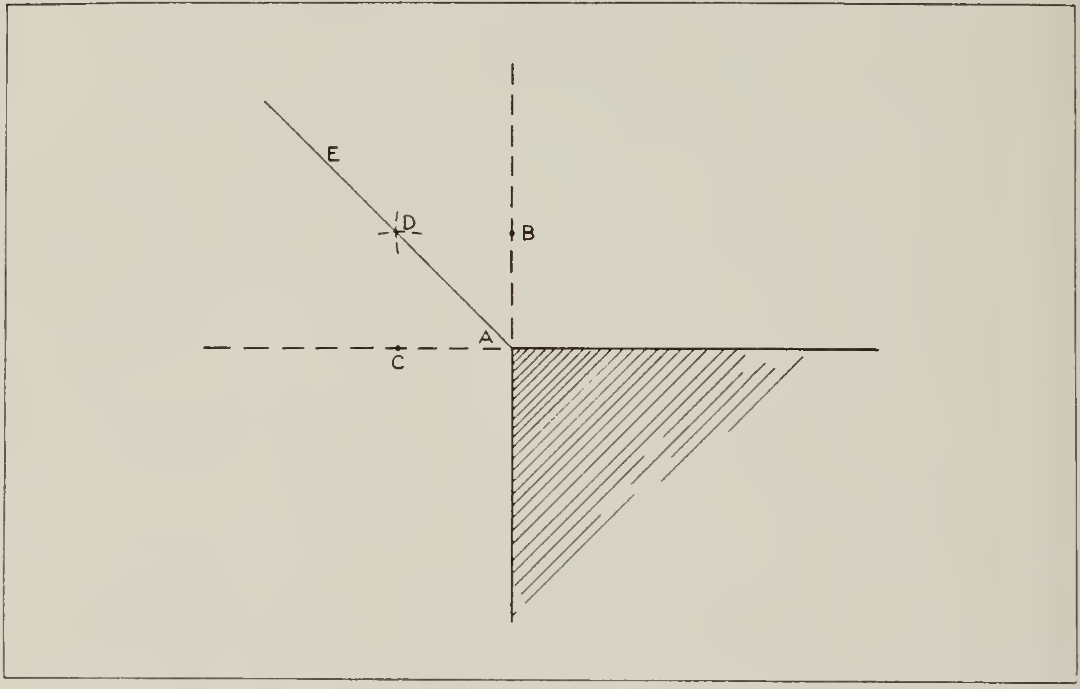


FIG. 127—*To bisect an outside corner, extend chalk lines from each of the two sides as shown by the dotted lines. Then divide the angle formed by these lines exactly as if it were an inside angle (as illustrated in preceding Fig. 126).*

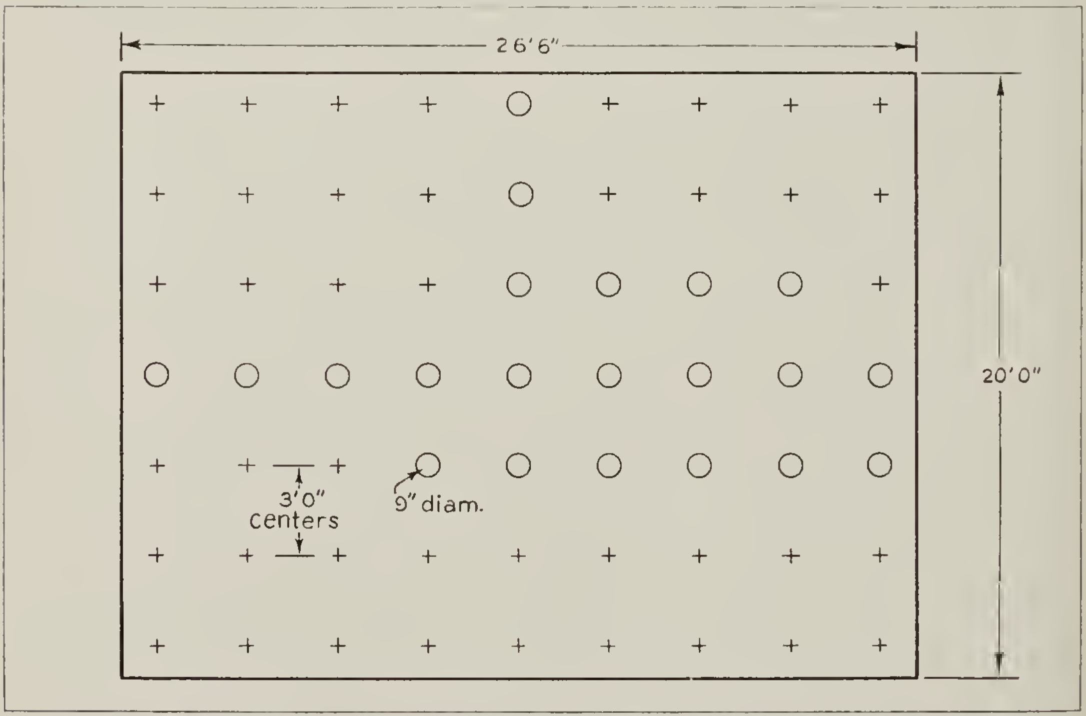


FIG. 128—*Where dots or other designs are to be inset in the floor at regular intervals, strike center lines as previously explained: then draw lines parallel to them. These will be spaced according to the distance desired between elements.*

Bisecting an Angle

When a Linoset is to be placed in each corner of the room, it should be placed along a line that divides the angle into two equal parts. An inside angle is bisected as follows, Fig. 126:

1. From *A*, the corner of the field (or of the wall if no border is to be used), strike two lines of equal length, *AC* and *AB*, as shown in Fig. 126.

2. With *B* as a center and *BA* as a radius, strike an arc *BD*.

3. With *C* as a center and *AC* as a radius, strike an arc *CD*.

4. From D, which is the point where the two arcs (from *B* and *C*) meet, strike a line to *A*.

5. If, for example, the center of the design is to be at *E*, 2′ from the corner, measure out 2′ along Line *AD* and mark *E*.

6. Repeat this at each of the corners. Where the corners are not exact right angles, the method is the same.

Bisecting Outside Corner

At an outside corner, extend chalk lines from each of the two sides, as shown by the dotted lines in Fig. 127. Then divide the angle formed by these lines as if it were an inside corner.

When the mechanic masters the simple principles explained, he is in a position to lay out any type of linoleum floor.

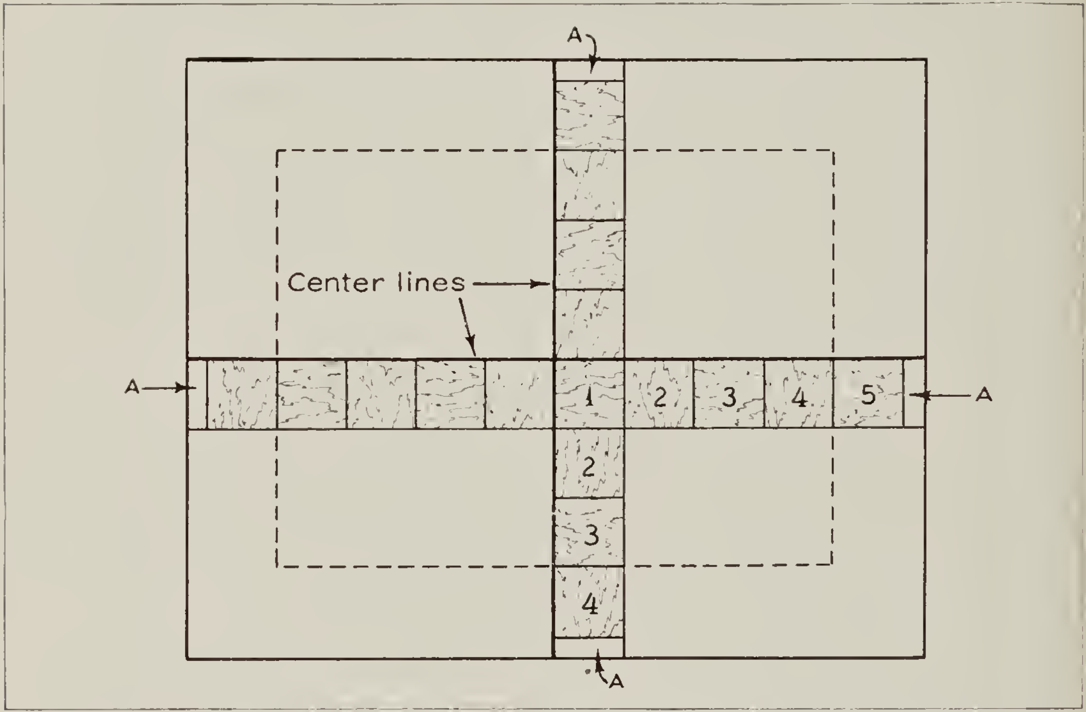


FIG. 129—*Lay Block No. 1 with two sides touching center lines. Lay other blocks next to it toward a long and short wall. If less than half a block fills A, an even number of whole blocks is required: and No. 1 will remain as shown.*

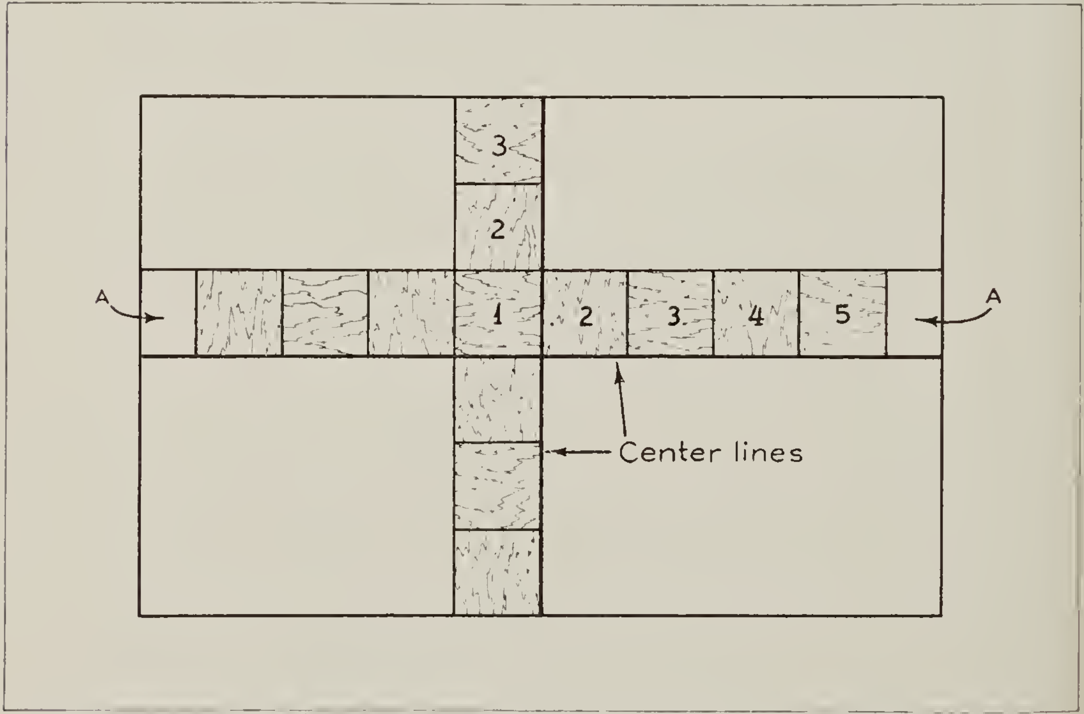


FIG. 130—*If, unlike the example shown in Fig. 129, on one dimension space A requires a half-block or more than a half-block to fill it, the number of whole blocks across this dimension will always be an odd number. See Fig. 131.*

CHAPTER SIXTEEN

Square and Diagonal Block Designs

Where an allover type of linoleum is to be cut into square blocks and laid in a block design the job is laid out as follows:

1. Strike center lines across the room, as in Chapter XV.

2. Lay Block No. 1 unpasted so that two of its sides lie along the intersecting center lines, as shown in Fig. 129. Then lay the other blocks next to it toward one long wall and one short wall.

3. Count the number of full blocks from the center to one long and one short wall. If less than half a block is required to fill the final space (*A* in Fig. 129), the number of whole blocks across the entire room will always be an even number (4, 6, 8, etc); and Block No. 1 may remain as in Fig. 129.

If, on *one* dimension, Space *A* requires a half-block or more to

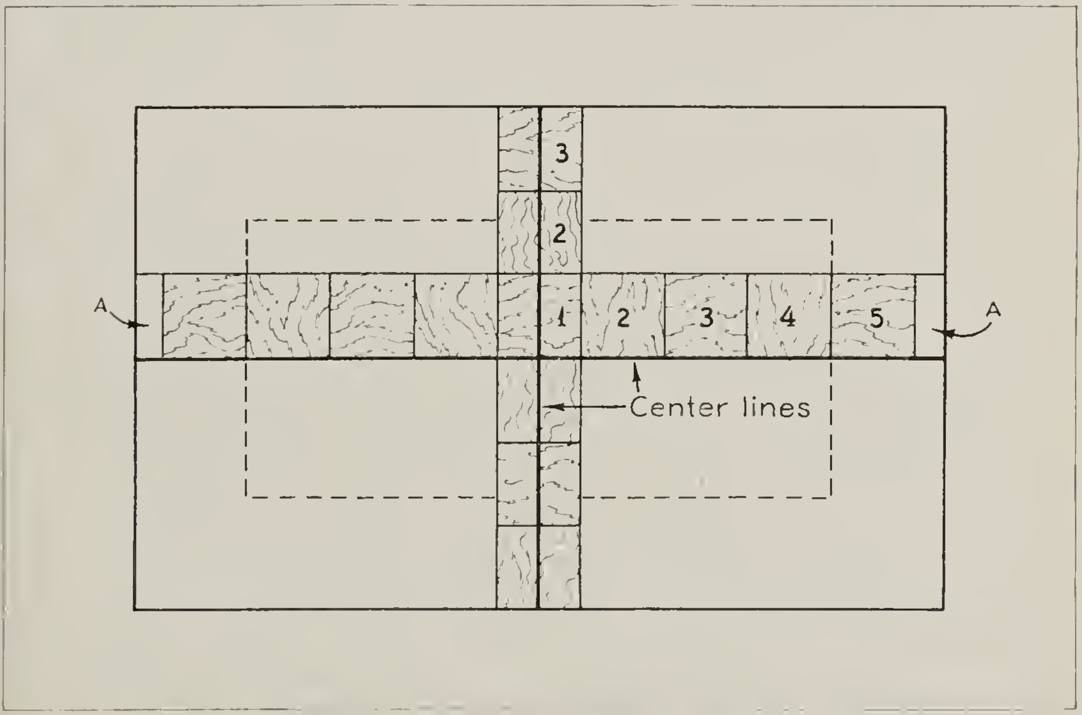


FIG. 131—*Since space A (Fig. 130) needed more than half a block to fill it, the position of Block No. 1 was changed so that it is now crossed by one of the center lines. Thus the whole number of blocks across this dimension is an odd number.*

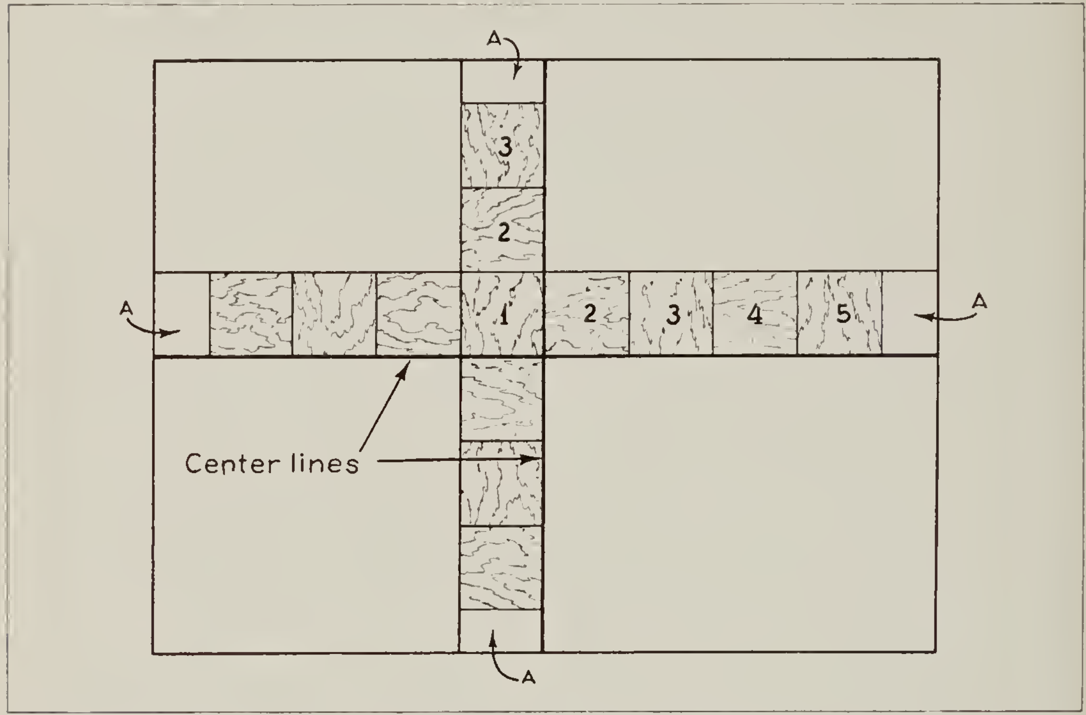


FIG. 132—*In the diagram above, the overall size of the room is such that space A requires a half block or more to fill it on both dimensions. Therefore, the number of whole blocks across each dimension will be an odd number. See Fig. 133.*

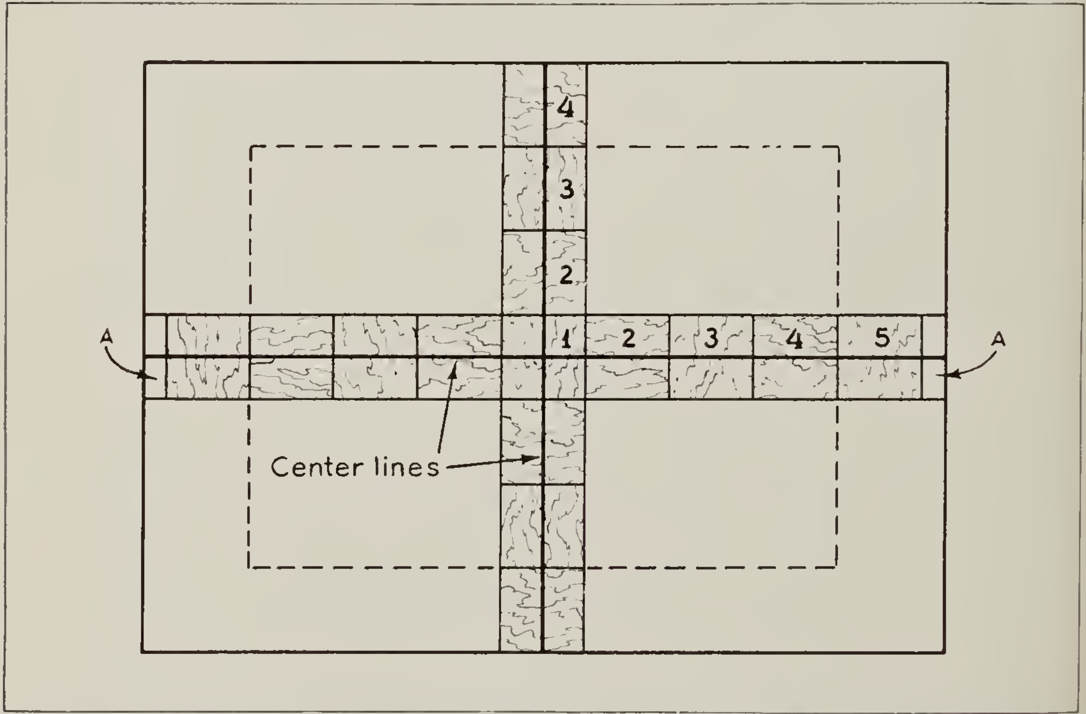


FIG. 133—*Where space A requires a half-block or more to fill in on both dimensions, the position of Block No. 1 will have to be changed so that it is crossed by both the center lines. All blocks now placed in the room will be full blocks.*

fill it, (as shown in Fig. 130), the number of whole blocks across this dimension will always be an odd number; and the position of Block No. 1 will have to be changed so that it is crossed by *one* of the center lines, as shown in Fig. 131.

If, on *both* dimensions, Space *A* requires a half-block or more to fill it, (as shown in Fig. 132), the number of whole blocks across each dimension will be an odd number; and the position of Block No. 1 will have to be changed so that it is crossed by *both* the intersecting center lines, as shown in Fig. 133.

4. When the blocks have been set in their proper position, mark the floor at the end of the next-to-last block. Through this mark, strike a chalk line parallel to the center line. On the opposite sides of the room, strike similar parallel lines the same distance from the center. The rectangle produced by these chalk lines is shown by the dotted lines in Figs. 129, 131, and 133.

5. Starting at the corner of the rectangle formed by these lines, spread 2 or 3 sq. yds. of paste on the floor, and lay the blocks toward the center of the room. Continue until blocks have been pasted over the entire area bounded by the chalk lines. Do not paste beyond the chalk lines. Roll the blocks after two or three rows have been pasted down; then roll the entire area. If paste oozes out at the end blocks, remove it promptly.

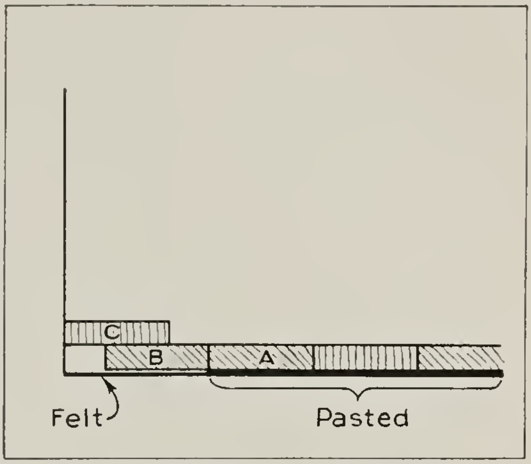


Fig. 134—*Butt block B against A. If B does not touch the wall, butt C to the wall so that it overlaps B.*

Fitting to Wall

6. As shown in Fig. 134, butt the final block, *B*, against *A*, which is the last pasted block.

If *B* does not extend all the way to the wall, butt another block, *C*, to the wall so that one edge of it laps over *B*, as shown in Fig. 134.

7. Using the edge of *C* as a guide, score *B* and cut it along the scored line, as in Fig. 135.

8. Discard the part of *B* that is covered by *C*. This part is referred to as B_1 in Fig. 135.

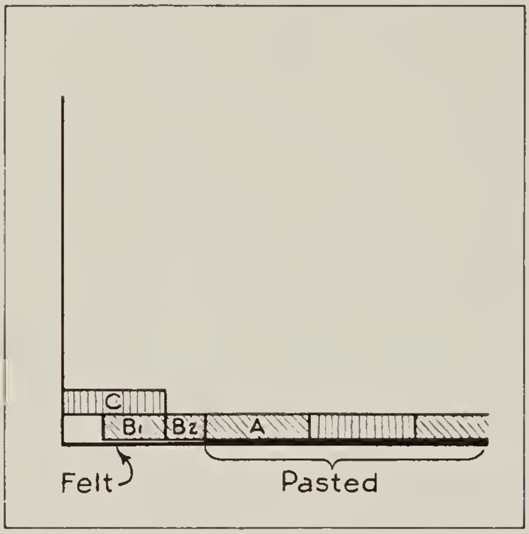


Fig. 135—*Using the edge of block C as a guide, score block B and cut it into the two parts indicated as B1 and B2.*

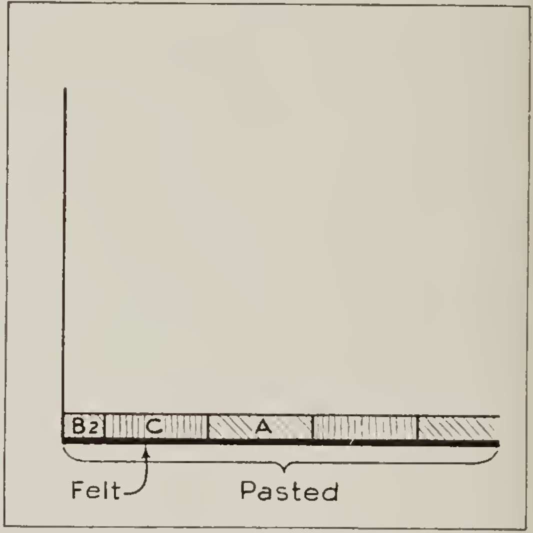


Fig. 136—*Discard B1, butt B2 to the wall, and move C into the position formerly occupied by the whole block B.*

The part not covered by *C* is referred to as B_2 in Fig. 135.

9. Butt B_2 against the wall, and move *C* into the position formerly occupied by whole block *B*, as shown in Fig. 136.

10. Repeat this operation along all four walls. Check the fit, and then remove the pieces and paste them in position. As a final step, roll the entire floor and remove all excess paste. If necessary, seams should be ironed with a hammer head after the linoleum has been moistened.

Where a field of this type is to have a border strip around it, cut the strip slightly wider than the required width of border. Then butt or scribe the strip to the wall so that the last row of blocks laps over the other edge of the strip. Score and cut the strip along the edge of the last row of blocks.

Where the strips overlap at corners of the room, cut a mitred joint. The entire border can be cut and pasted at once, or one side at a time may be completed.

Square Blocks Laid Diagonally

When square blocks are to be laid diagonally, the first step is to strike center lines across both dimensions of the room.

Starting at the center, lay a row of blocks along each center line so that the center line crosses the block from corner to corner—i. e. on the diagonal, as shown in Fig. 137. If an even number of blocks is required for each dimension, as in Fig. 137, the center blocks may be left in this position. This will result in two half-blocks at each corner.

If an even number is required across one dimension, and an odd number across the other dimension, change the position of the blocks at the center so that one block is divided into four equal parts by the intersecting center lines, as shown in Fig. 138. This will result in two half-blocks at each corner.

If an odd number of blocks is required across each dimension, the blocks at the center are laid the same as for the even-and-odd

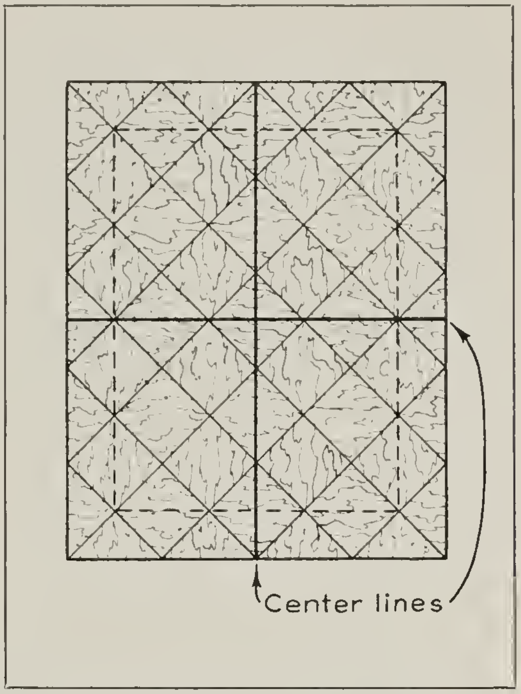


FIG. 138—*The first block is placed so that the intersecting lines divide it into four equal parts.*

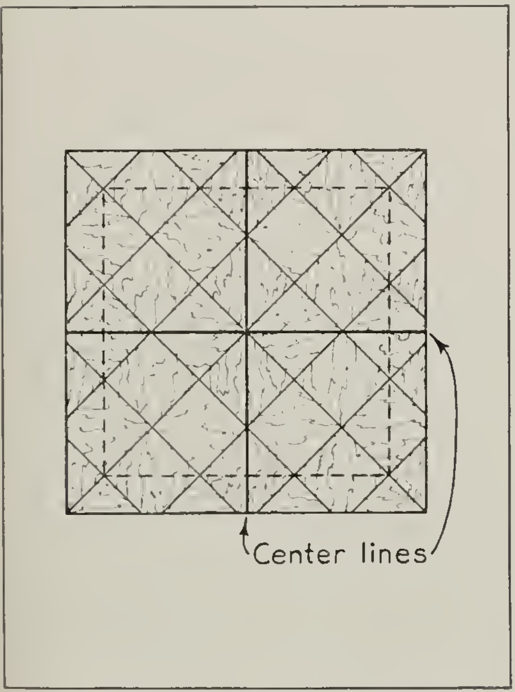


FIG. 137—*Lay a row of blocks diagonally along each center line. If even in number, leave blocks in position.*

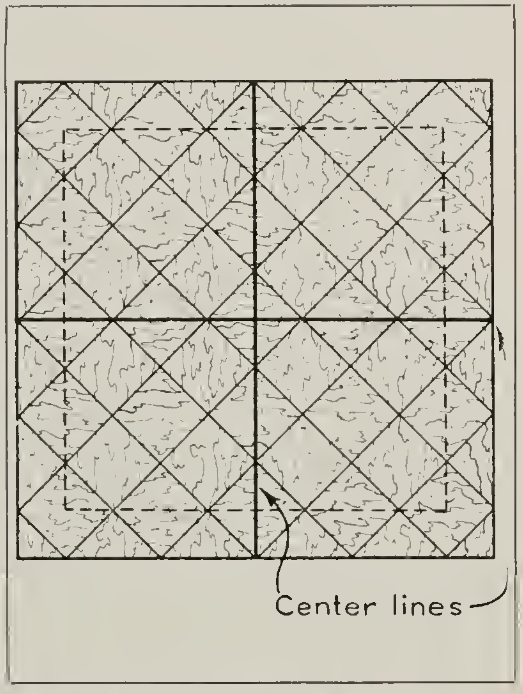


FIG. 139—*If odd number of blocks is needed across each dimension, the center blocks are laid as in Fig.* 138.

combination. See Fig. 139. In this case, however, there will be one quarter-block instead of two half-blocks at each corner.

If, in any of the above combinations, the last row of blocks next to a wall consists of pieces that are not exact half-blocks, a border is generally desirable. The line for the border should be struck so that the field will end with a row of half-blocks. The dotted lines in Figs. 137, 138, and 139 represent the lines that would be struck for borders.

If a border is not to be used, paste the blocks first along each center line, starting at the center of the room and working toward each wall. Then, working toward the corner, paste each quarter-section of the room in place.

If a border is to be used, nail laths to the subfloor along the dotted lines shown in Figs. 137, 138, and 139. These laths serve as a guide and provide an edge against which the blocks are butted. Starting at one of the corners formed by the laths, spread paste ahead about 3 sq. yds. and lay the blocks toward the center of the room.

In all types of diagonal block designs, nail lath guides every two or three rows to the floor.

CHAPTER SEVENTEEN

How to Install Ready-Cut Linosets

Each Ready-Cut Linoset is supplied with all the parts of the design held in place by a piece of cellophane pasted over the top surface of the material. The cellophane should not be removed until the Linoset has been pasted into the floor and rolled.

In Heavy, Medium, or Standard gauge fields, Linosets of the same gauge should be used. In 6-mm. or 3/16″ gauge fields, the Heavy gauge Linoset should be used with a piece of lining felt pasted between it and the felt or subfloor to build it up.

Linosets without Linostrips

If the Linoset is to be installed without Linostrips around it, the method to employ is as follows:

1. If the Linoset is a square or oblong, find the mid-points of each of its four sides, Fig. 140, and strike lines across the cellophane, so that the Linoset is divided into four equal parts. If the Linoset is an oval or circle, it will be shipped surrounded by a square or oblong field; and the lines can be struck as above.

2. Strike center lines on the felt, as in Chapter XV.

3. Place the Linoset on the felt or subfloor; and line up the center lines with the cross-lines on the Linoset, as shown in Fig. 141. Compass Linosets are ordinarily placed in the field so

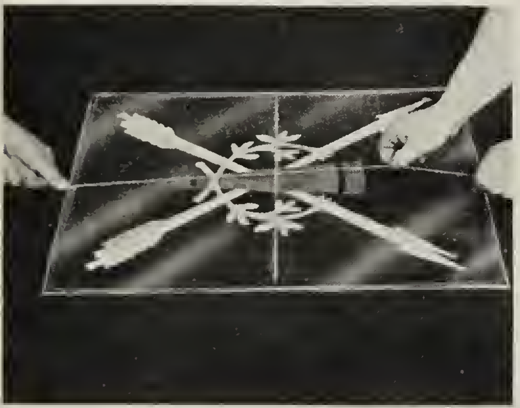


Fig. 140—*Strike lines at center points of all four sides of the Linoset, dividing it into four equal parts.*

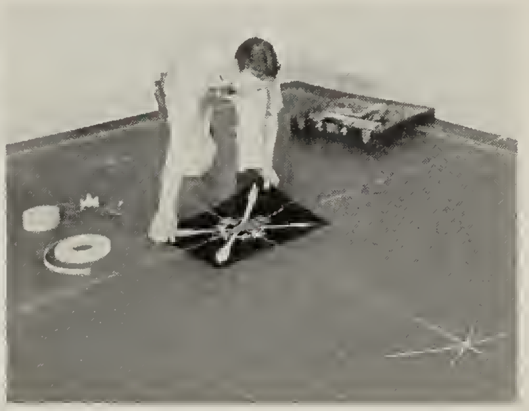


Fig. 141—*Lay the Linoset on the linoleum, so that the center lines correspond with center lines on the field.*

that the N points to the North.

4. Trace the outline of the Linoset on the felt or concrete. This outline serves as a guide to pasting when the field is laid.

Fitting Field Linoleum

5. Then carefully fit the field linoleum to the room and paste it down. *Do not spread paste over the area that the Linoset will occupy.* Roll the field linoleum.

6. Draw the center lines on the linoleum in the same manner as you drew them on the lining felt or concrete floor, Fig. 141.

7. Lay the Linoset on the linoleum so that the center lines on the Linoset exactly line up with the center lines on the linoleum. See Fig. 141. Weight or fasten the Linoset to the linoleum with Scotch tape or adhesive tape to keep it from slipping during cutting.

8. Score the field linoleum along the four edges of the Linoset, using the outside edges of the Linoset as a guide for the knife. Then remove the Linoset and cut through the field.

9. Remove the cut-out linoleum from the field; and spread paste on the exposed felt or concrete. If a ⅛″ gauge Linoset is being installed in a $\frac{3}{16}$″ or 6-mm. gauge field, paste a piece of lining felt in the opening to build up the Linoset and bring it flush with the field. Before pasting this extra piece of lining felt, make sure that it does not cause the Linoset to project above the field. If it does, sandpaper the felt lightly until the top of the Linoset is flush with the field.

10. Place the Linoset in the opening and roll it with a linoleum roller.

11. Then peel off the cellophane by raising it at one corner and pulling carefully, so as not to loosen parts of the Linoset. See Fig. 145. With a damp cloth, remove the paste used to fasten the cellophane.

12. With the smooth head of a hammer, "iron" down the dampened pieces of the Linoset so that all edges of the Linoset are flush with the field. See Fig. 146.

Linosets with Linostrips

Where the Linoset is to be framed with a Linostrip on all sides, the steps are as follows:

1. Perform Steps No. 1 through 7, as described above.

2. Cut the required number of Linostrips slightly longer than the space they are to fill in the opening, so that their ends can be lapped and mitred.

3. Press the various sections of Linostrip tightly against each of the edges of the Linoset, as

is illustrated in Fig. 142 below.

4. Then, holding the Linostrips in this position, score the field around the outside edges of the Linostrips, as in Fig. 142.

5. Cut the field linoleum along the score marks and remove the waste. Then spread linoleum paste in the opening.

6. Insert two Linostrips against two edges of the field in the opening, so that their ends overlap, as shown in Fig. 143.

7. Insert the Linoset, pressing it tightly against the two Linostrips, as in Fig. 143. Then insert the other two Linostrips, so that all the ends of the Linostrips overlap.

8. Cut a mitred seam from each corner of the Linoset to the outside corners of the overlapping Linostrips, as shown in Fig. 144. Remove the cello-

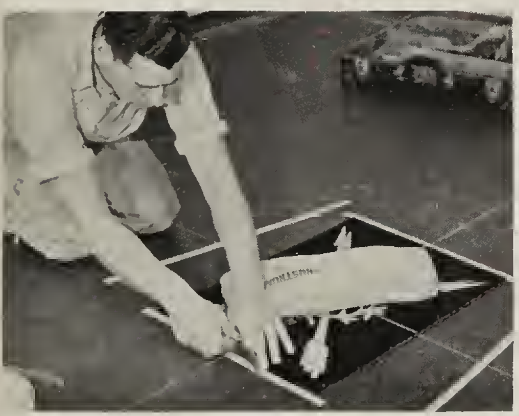


Fig. 142—*Press the Linostrip tightly against edges of the Linoset and score the field around the Linostrips.*

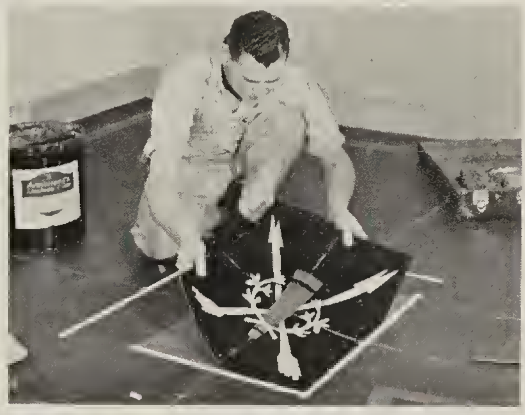


Fig. 143—*Insert two Linostrips against two edges of the field, and insert the Linoset tightly against them.*

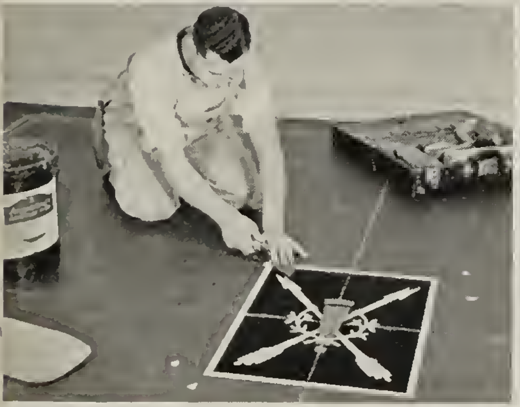


Fig. 144—*Cut a mitred seam from each corner of the Linoset to outside corners of the overlapping Linostrips.*

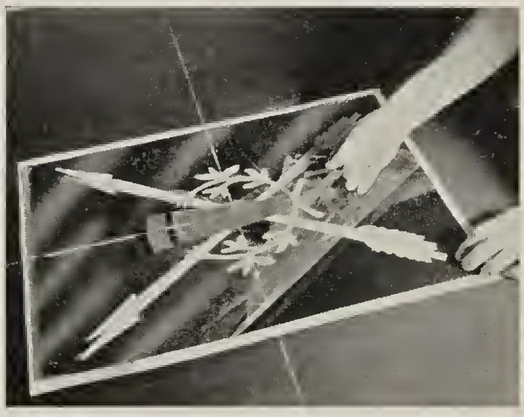


Fig. 145—*In peeling off the cellophane, raise and pull it carefully to prevent loosening parts of the Linoset.*

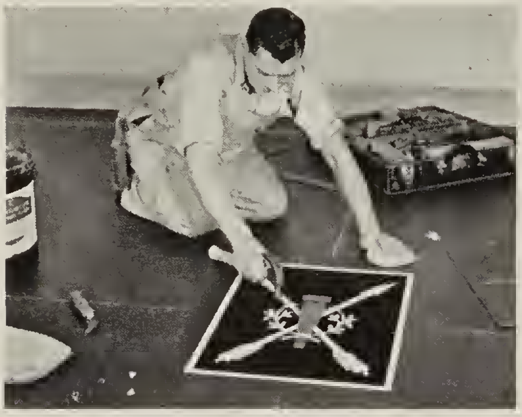


Fig. 146—*Using a smooth hammer head, "iron" down the pieces of the Linoset, evening edges with the field.*

phane and, dampening the material, iron the seams as explained above. See Fig. 146.

Linosets in Old Floors

If the Ready-Cut Linoset is to be installed in a room where the linoleum has already been laid, the steps are practically the same as for new floors:

1. The center lines are drawn on the Linoset and on the field linoleum. The field is scored and cut around the edges of the Linoset or Linostrips; and the cut-out piece is removed.

2. A certain amount of lining felt will peel off when this piece is removed. If the felt shears off evenly, build it up with heavy kraft or wrapping paper. If it does not shear off evenly, remove the old felt and paste in the new piece, making sure the Linoset is flush with the field.

CHAPTER EIGHTEEN

How to Cut Linosets with Custom-Craft Dies

Armstrong's Custom-Craft Dies provide an easy means of making attractive Linosets without hand-cutting. In addition to giving instructions for the proper use of the dies, this chapter will describe two recommended methods of installation—each adapted to a different type of design. Regardless of the method used, however, the same preliminary steps should be followed.

Preliminary Steps

1. Install and paste the lining felt to the subfloor, as described in Chapter V.

2. Next, fit the linoleum carefully to the room, but do not paste it down until after all die-cutting has been completed.

3. If a border is to be used, square and cut the field at the desired distance from the wall.

4. Draw a chalk line around the field linoleum on the lining felt to serve as a guide when pasting the field linoleum.

Holding the Dies

While die-cutting is extremely simple, the mechanic should spend a short while practicing before he attempts his first job, in order to get the feel of the tools.

For example, the proper method of holding the dies is important. Small dies can be held steady with one hand, as shown in Fig. 148.

The larger dies should be held as follows:

1. Place the die on the linoleum, cutting edge down, with one corner of the die-block toward you.

2. If you are right-handed, kneel on your left knee.

3. Place your right foot on the corner of the die at your right.

4. Place your left hand on the corner of the die at your left.

5. Grasping the hammer in your right hand, place your right arm between your right leg and left arm, so that the elbow is close to the crotch.

Striking the Dies

1. If the subfloor is wood, place the steel pounding plate under the linoleum to be die-cut, as shown in Fig. 147. Many wood floors are springy and will cause the die to bounce out of position when it is struck, if the steel pounding plate is not used.

If the floor is concrete, however, it is not necessary to use the plate. Simply place a piece of scrap linoleum under the material to protect the cutting edge of the die.

2. Strike the die solidly with the hammer, using a strong follow-through blow. This is particularly important in the first few anchoring blows.

3. Hold the die firmly during the first few blows, and resist your natural impulse to flinch and to release the holding pressure when a blow is struck.

4. Strike the first blow a little to one side of the exact center of the die, but within the knife edge of the design.

5. After checking to make sure that the die has not bounced out of position, strike each succeeding blow along the outline of the design. Move *gradually* away from the point where the first blow was struck. Do not strike the second blow opposite the point where the first blow was struck because this may rock the die out of position.

The Chalk Line Method of Positioning

1. If the design is to be in the center of the room, strike center lines at right angles to each other, as explained in Chapter XV. If the Linoset is to be placed at an inside or an outside corner, strike a line bisecting the angle, as explained in Chapter XV.

2. At the point where the center of the die-cut is to be, strike a line at right angles to the center line. These lines are illustrated in Fig. 147.

3. Place the die on the field linoleum so that the center lines on the four sides of the die-block line up with the chalk lines on the linoleum. See Fig. 148. Then hammer the die to make the cut, hammering in the manner explained above.

4. After the first blow, check the center lines on the die-block and the chalk lines on the floor to make sure that the die has not bounced out of position. Then continue pounding until the cutting edge of the die has been driven all the way through the linoleum.

5. Lift the die and, by inserting the eraser end of a pencil in the hole of the die-block, push out the die-cut shape.

6. To cut out the piece that will be inserted in the opening which has just been made in the field linoleum, simply hammer the die (as explained above) into another piece of linoleum of the same gauge and of the desired color. See Fig. 149. It is not necessary to strike center lines

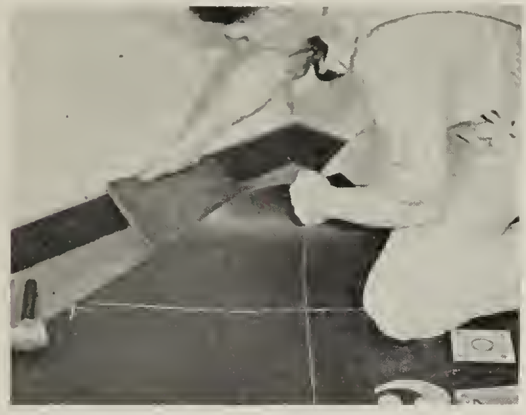


Fig. 147—*If the subfloor is wood, place the pounding plate under the linoleum to keep the die from bouncing.*

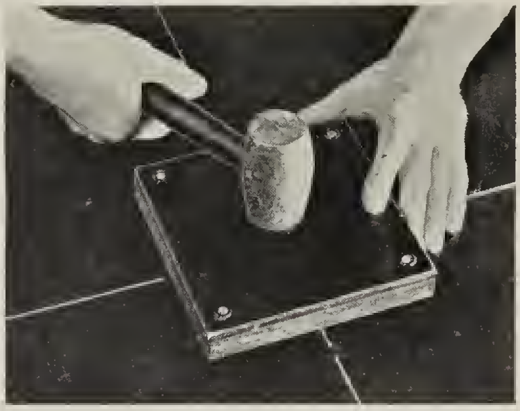


Fig. 148—*Hold the die with its center marks in line with the center marks struck on the linoleum.*

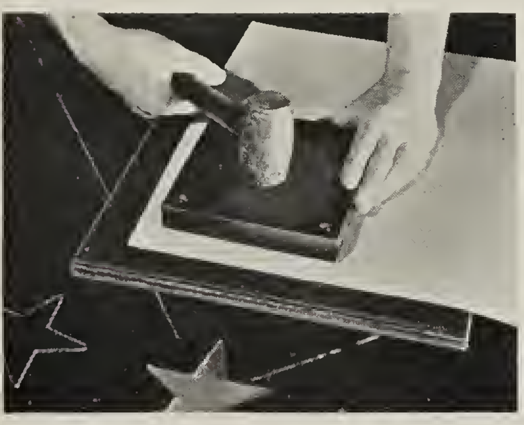


Fig. 149—*Cut out the insert by hammering the die into linoleum of the same gauge and of the desired color.*

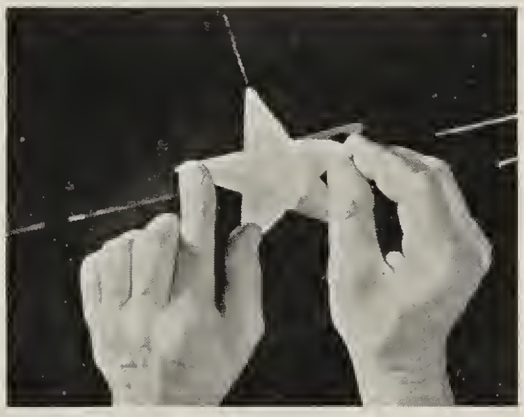


Fig. 150—*When the inset shapes have been cut out, carefully fit them into openings in the field linoleum.*

on this piece of linoleum. In fact, these inset pieces can be cut in advance in the workroom. Having them already cut when the field is being laid out will often aid in making the layout and in locating the correct positions for the Linosets.

7. The inset shapes are then carefully fitted into the openings in the field linoleum, Fig. 150.

The Template Method of Positioning

The foregoing method of cutting the field linoleum can be used where a simple die-cut design is to be inserted in the floor. Positioning of the dies was done simply by lining up the center lines on the die-block with the chalk lines on the floor.

Where more complicated designs, such as the one illustrated

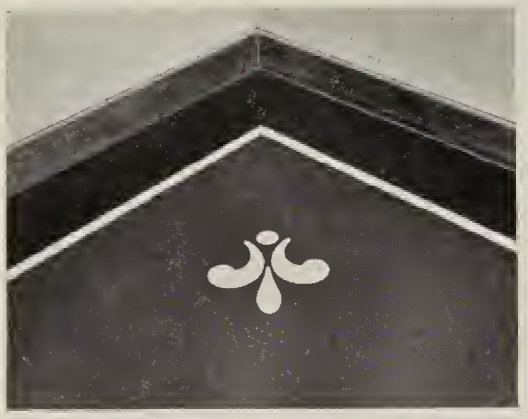


FIG. 151—*Where more intricate designs, as above, are used, the template method of positioning dies is easier.*

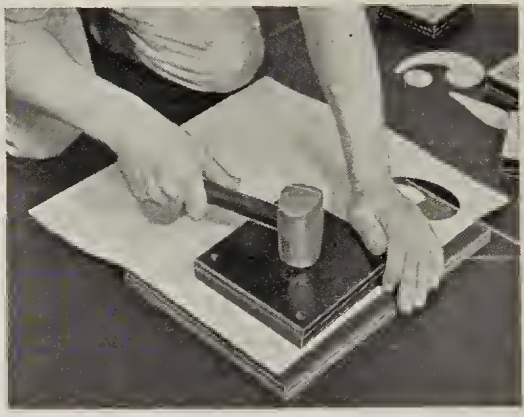


FIG. 152—*After striking center lines on the field, cut the shape in a linoleum scrap larger than the block.*

in Fig. 151, are to be installed, the template method of positioning the dies will be easier. The steps are as follows:

1. Strike center lines and cross lines as explained in Steps 1 and 2 of the chalk line method.

2. In a scrap of linoleum somewhat larger than the die-block, cut the shape as already described. See Fig. 152.

3. Then, before lifting the die, cut the linoleum along the four sides of the die-block with a knife, as shown in Fig. 153, so that the linoleum is exactly the shape and size of the die-block.

4. Remove the die-cut shape and use the rest of the piece as a template in the following manner:

5. Lay the template on the field linoleum and move it about until the die-cut shape is in the exact position required for the finished design. See Fig. 154.

6. Holding the template steady, trace around its outside edges with a pencil, Fig. 154, so that the shape of the die-block is marked on the field linoleum.

7. Place the die-block on the linoleum so that its four outside edges line up exactly with the pencil lines, as in Fig. 155. Then hammer to cut the shape in the field linoleum, as described above and as shown in Fig. 156.

8. Repeat these steps for each die used in the design.

Installing the Linoset

1. When all the openings in the field linoleum and all the inset figures have been cut, insert the insets in the openings in the field linoleum.

2. Then fasten the insets to the field linoleum with Scotch tape, as shown in Fig. 157.

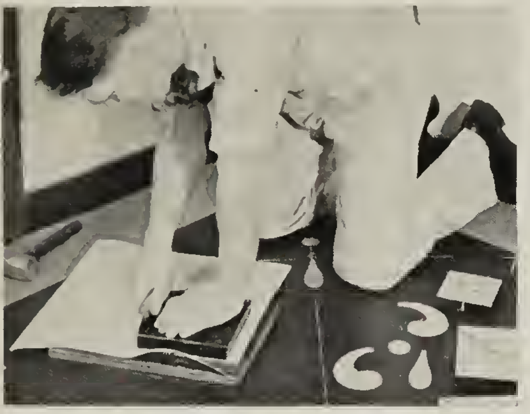


FIG. 153—*Cut the linoleum along all sides of the die-block to reduce it to the size and shape of the die-block.*

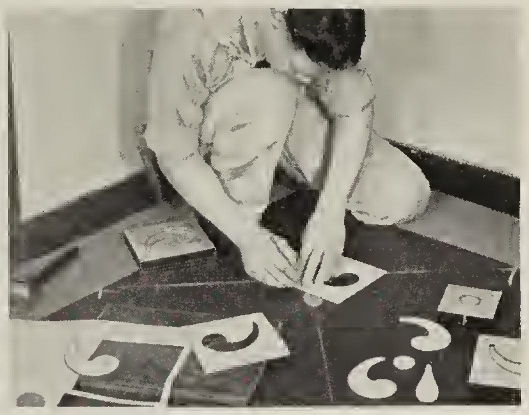


FIG. 154—*With the template in the correct position on the field, trace around its outside edges with a pencil.*

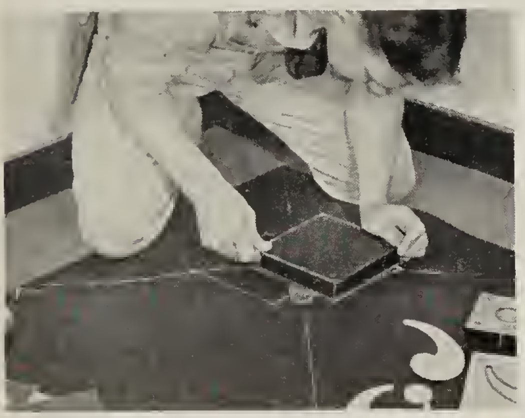


FIG. 155—*Place the die-block on the linoleum so that its four outside edges line up with the pencil lines.*

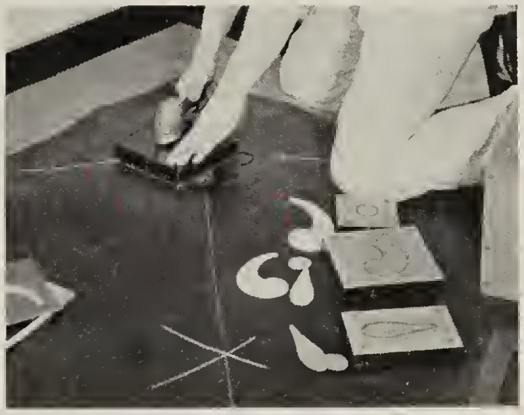


FIG. 156—*Carefully hammer the die-block in the recommended manner to cut out the shape in the field linoleum.*

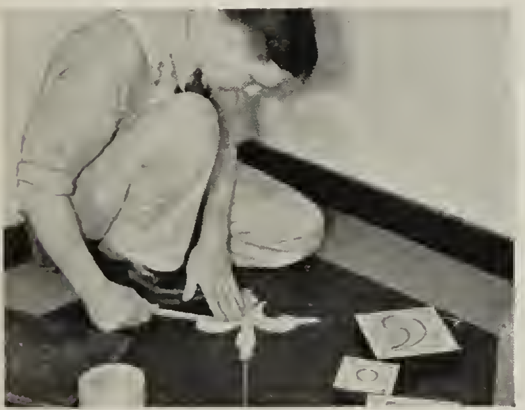


FIG. 157—*When all insets and openings have been cut and placed, fasten them to the field with tape.*

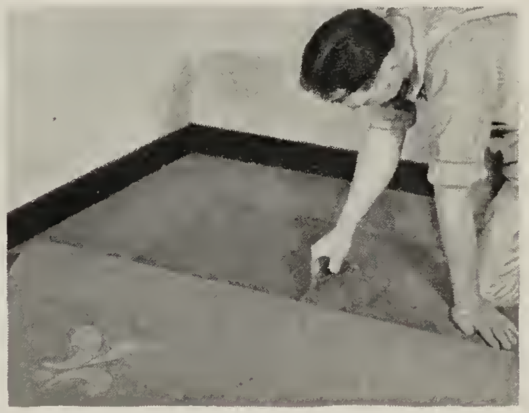


FIG. 158—*Lap or tube back the field and spread linoleum paste with a rubber-edged, saw-toothed spreader.*

3. Lap or tube back the field linoleum and spread the paste, as illustrated in Fig. 158.

4. Replace the linoleum and roll it thoroughly as usual.

5. Remove the Scotch tape. If parts of the design are higher than the field, dampen the Linoset with a wet cloth and "iron" it down with the head of a hammer. Weight the Linoset down with sandbags until the paste has thoroughly set.

General Suggestions

1. Where the more intricate shapes, such as stars and rosettes, are cut at the workroom, it is well to make a mark on the inset to indicate which side represents the top of the die. This will save time in obtaining a correct fit when the insets are being set into the field.

2. The dies will cut completely through material ⅛″ or less in thickness. Where 3/16″ or 6 mm. linoleum is used, the cut can be started with the dies and finished with a linoleum knife.

3. Dies can be readily sharpened, when necessary, with a small three-cornered metal file.

CHAPTER NINETEEN

How to Use the Custom Floor Cutter and Universal Scriber

In addition to doing several kinds of scribing, the Custom Floor Cutter and the Universal Scriber will cut any design laid out with a compass and a ruler.

The following example indicates the general procedure in laying out and cutting Linosets with either of these tools, which in operation are essentially the same.

Layout of Design

1. Before starting to lay out the design, cut a piece of linoleum of each color to be used, not including the field color. These pieces should be square, of exactly the same size, and somewhat larger than the greatest dimension of the complete design.

2. Lay out the design on the color of linoleum which will predominate in the completed design. The steps are as follows:

3. First, strike a center line between two opposite sides. Then erect a perpendicular between the other two sides, bisecting the first center line. See Fig. 160. In these instructions, these two lines will be referred to as the *center lines*, intersecting at the *center point*, and forming four *right angles*.

4. Bisect each of the right angles with dividers, as shown in Fig. 160, and draw diagonal lines between the intersections of arcs, as illustrated in Fig. 161.

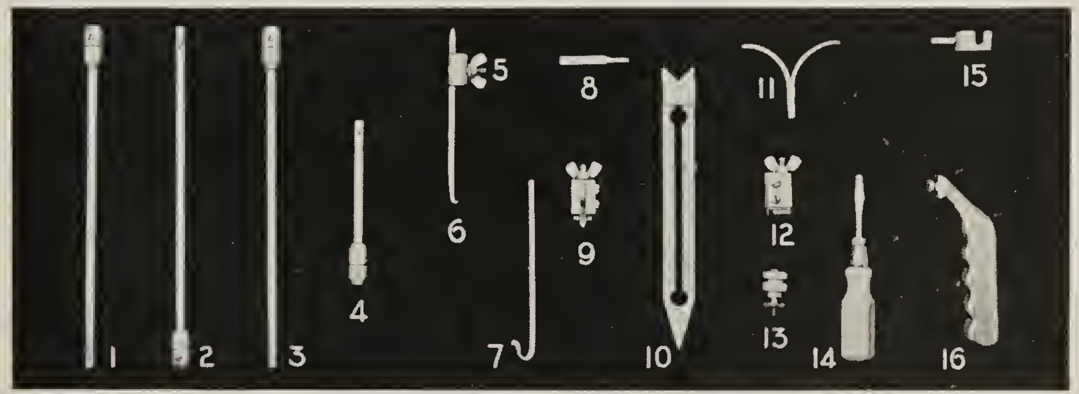


Fig. 159—*Parts of the Universal Scriber:* (1, 2, 3) *12″ extension rods;* (4) *6″ extension rod;* (5) *cylinder for scribing rods;* (6) *recess scribing rod;* (7) *core base scribing rod;* (8) *scribing point;* (9, 12) *knives and holders;* (10) *bar;* (11) *radius scribing attachment;* (13) *pin and holder;* (14) *screwdriver;* (15) *pivot-pin holder;* and (16) *handle.*

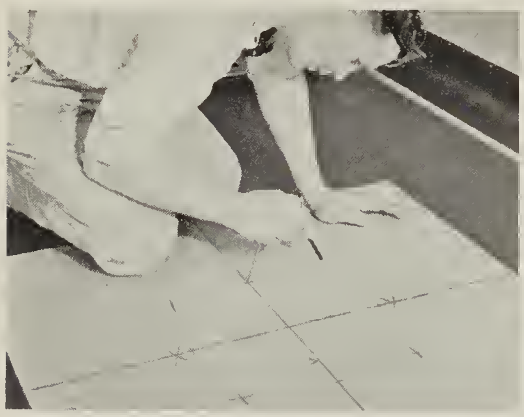


FIG. 160—*Strike a center line between opposite sides. Erect a perpendicular between the other two sides.*

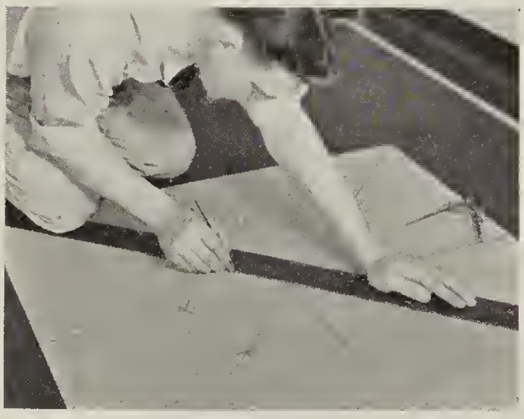


FIG. 161—*Having bisected all the right angles at the center, draw diagonals between the intersection of arcs.*

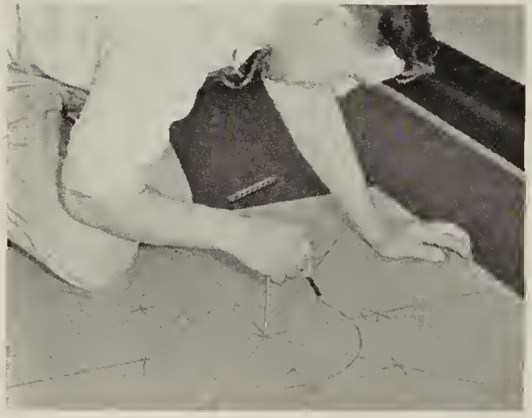


FIG. 162—*Draw the large circle around the center point. The radius is determined by the size of the design.*

5. Draw the large circle around the center point, the radius being determined by the desired size of the design. See Fig. 162.

6. Draw the inverted arcs with the dividers, as indicated by Fig. 163, using centers on the center lines, equidistant from the center point.

7. Draw the smaller concentric circles, again using the center point as the radius mark.

8. Using the intersections of the inverted arcs with the center lines as centers, draw in the small arcs which cross at the diagonal lines.

9. Draw in the small outside arcs, Fig. 164. For each arc, the point of the dividers is set at the intersection of the large circle with one of the diagonal lines.

Layout of the Floor

10. Square off the room, striking center lines and diagonal lines on the field linoleum, as shown in Fig. 165. These lines correspond to those struck on the layout piece.

11. Strike similar center lines and diagonals on the second square piece of linoleum.

12. Lay this second piece over the middle of the field, carefully lining up the center and diagonal lines with the corresponding lines on the field. See Fig. 166.

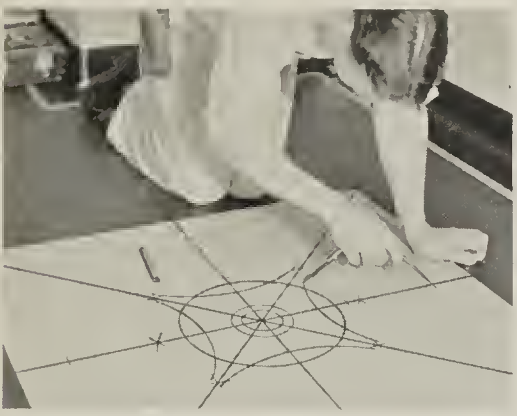


FIG. 163—*Draw inverted arcs, using centers on the center lines. The centers are equidistant from the center point.*

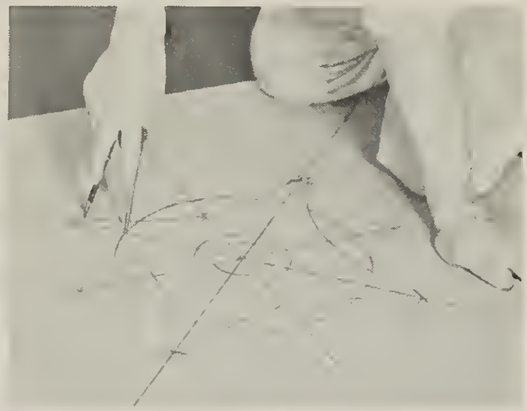


FIG. 164—*With dividers at the intersection of the large circle and diagonal, draw the small outside arcs.*

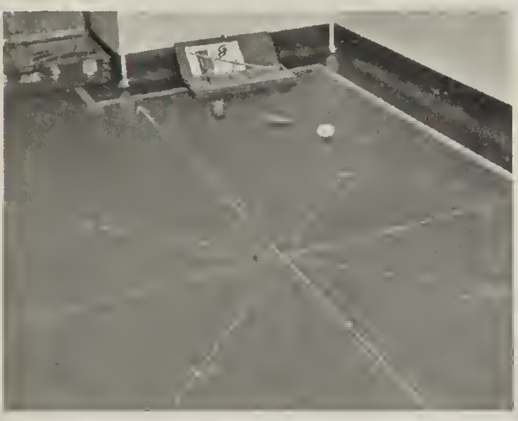


FIG. 165—*The center lines and diagonals drawn on the field correspond to those on the piece of linoleum.*

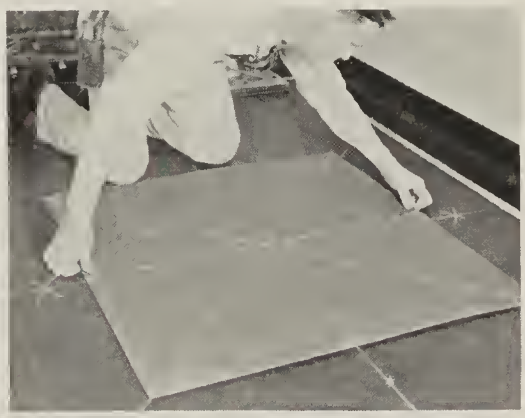


FIG. 166—*The lines on the second piece of linoleum must correspond exactly to the lines drawn on the field.*

13. Next, place the layout piece of linoleum over the second square, Fig. 167, with its center and diagonal lines similarly lined up with the corresponding lines on the field linoleum.

14. Drive slender pins through the top piece of linoleum at the center points of all arcs and circles which have been laid out. The pins should be driven through both top pieces of the linoleum, and part way into the field. This step, illustrated in Fig. 168, establishes the radius points for the Custom Floor Cutter.

15. Now remove the pins and pull the squares to one side.

16. Place a scrap piece of linoleum under the layout square, as shown in Fig, 169.

Cutting and Installing

17. Set the Custom Floor Cutter at the proper radius to

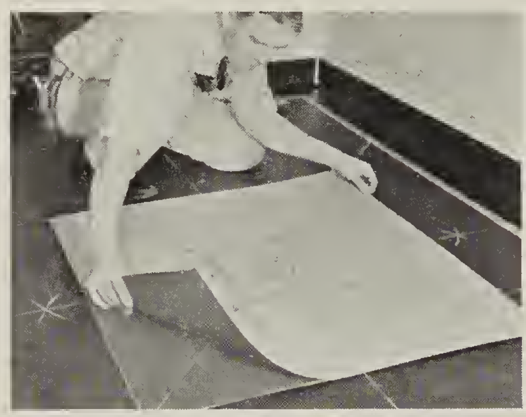


FIG. 167—*Place the layout piece over the second square of linoleum. All lines must correspond as shown.*

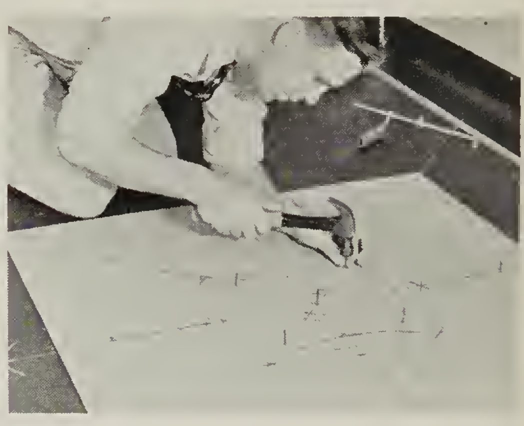


FIG. 168—*Drive slender pins part way into the field through the center points of all the arcs and circles.*

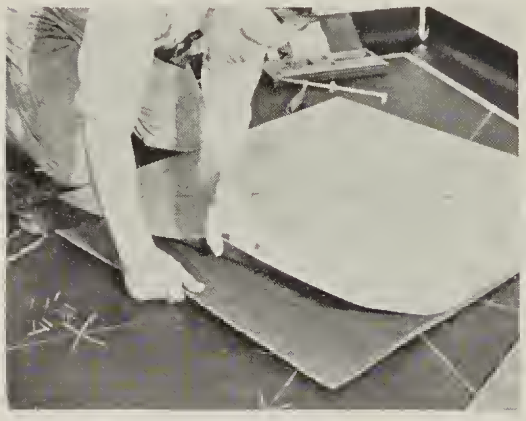


FIG. 169—*Remove all pins and draw to one side. Place a piece of scrap linoleum under the layout piece.*

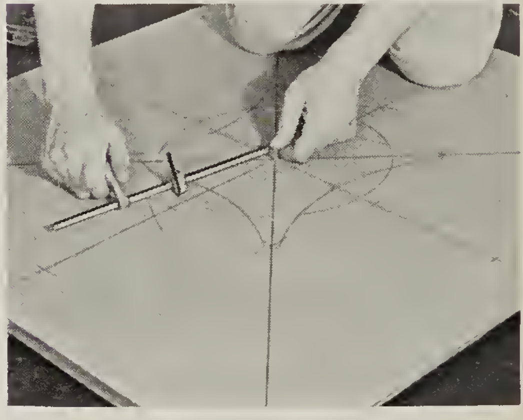


FIG. 170—*Set the Custom Floor Cutter at the proper radius to score and cut the large circle as illustrated.*

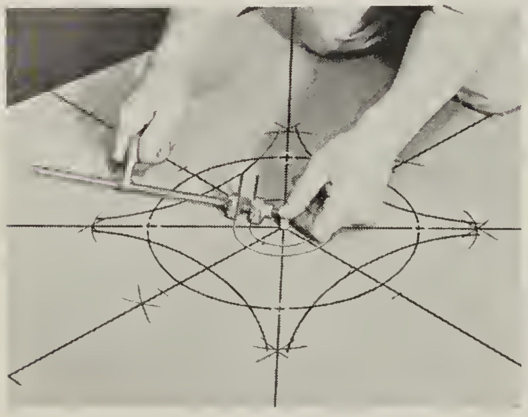


FIG. 171—*For greatest accuracy, score and cut the two small concentric circles with the cutter simultaneously.*

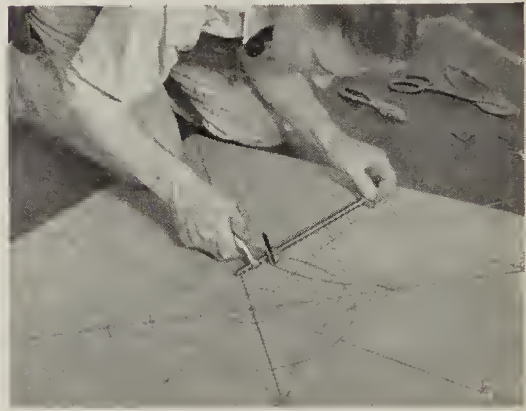


FIG. 172—*With the Custom Floor Cutter in position, score and cut all the other arcs that appear in the design.*

score and cut the large circle, as shown in Fig. 170.

18. Without changing the set of the tool, score and cut the corresponding circle in the other square of linoleum, and also in the field linoleum.

19. To insure greatest accuracy, set the two cutting blades of the Custom Floor Cutter for scoring and cutting the two small concentric circles at the same time, Fig. 171.

20. Without changing the set of the tool to another radius, repeat step No. 19 on the other square and on the field.

21. Follow the same procedure in scoring and cutting all other arcs in the design, as indicated by Figs. 172 and 173.

22. Starting with the piece of greatest area, which has been cut from the top or layout square, set the various parts of the design into the field material, Figs. 174 and 175.

23. Tape the loose pieces securely together as a unit, Fig. 176, without lapping the tape over onto the field.

24. Lift the unit out, Fig. 177, and set it to one side.

25. Spread linoleum paste over the lining felt in the area to be covered by the design, as shown in Fig. 178. The paste is care-

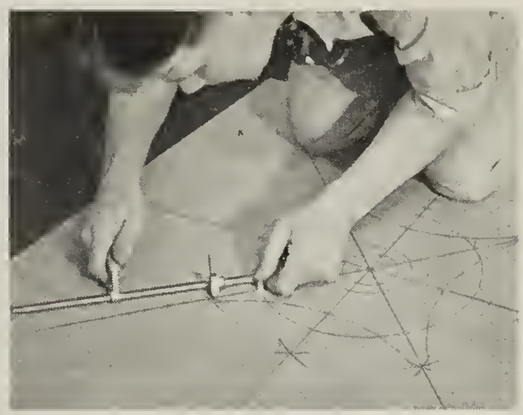


Fig. 173—*When scoring circular lines on the design, do not change the set of the tool to another radius.*

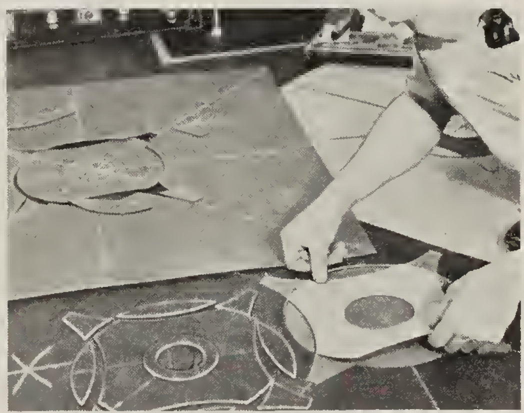


Fig. 174—*In transferring pieces of the design to the field, start always with the piece of greatest area.*

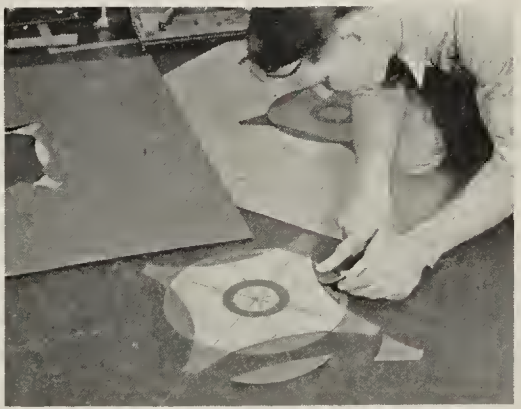


Fig. 175—*The various parts of the design, when they are completely cut out, should be firmly fitted together.*

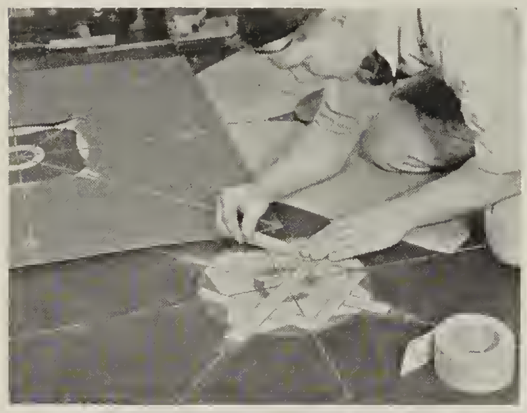


Fig. 176—*Tape the loose pieces securely together as a unit without lapping the tape over onto the field.*

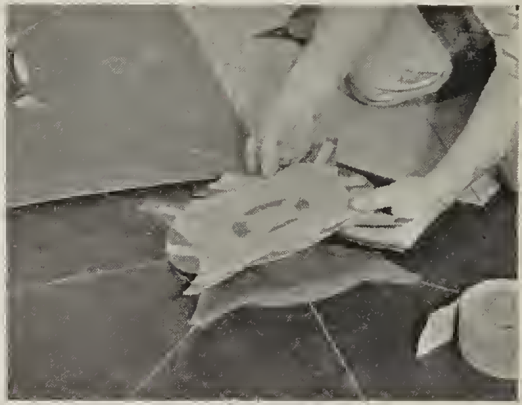


Fig. 177—*Lift the unit out and set it to one side to expose the lining felt so that it may be spread with paste.*

fully worked under the edges of the field with a spatula.

Note: If desired, the field may be cut and installed dry before cutting the design. In this case, the complete design is taped securely into the field before lapping the field back for pasting.

26. Lay the taped design in the paste. Then remove the tape and roll the design thoroughly with the linoleum roller. Finally, moistening the area with a damp cloth, "iron" the seams of the design with a hammer head as shown in Fig. 179.

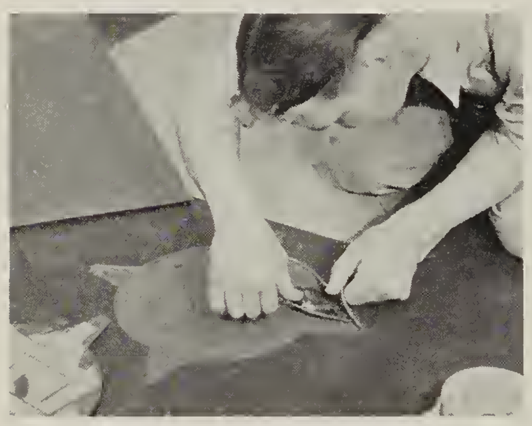


Fig. 178—*Spread linoleum paste over the lining felt on all portions of the area to be covered by the design.*

The completed installation is illustrated in Fig. 180.

Cutting Linostrips

With both cutting blades in position, any given distance apart, Linostrips may be produced conveniently and fitted on the job. In this operation, the handle of the tool should be attached between the two blades. In cutting, draw one blade along a straightedge as a guide, Fig. 181. Linostrips cut in this way are sure to have exactly parallel edges for their entire length.

Curved Linostrips may be similarly produced by using a curved edge as a guide, or by following a pattern drawn on the material. Also, by using the radius point at one end of the

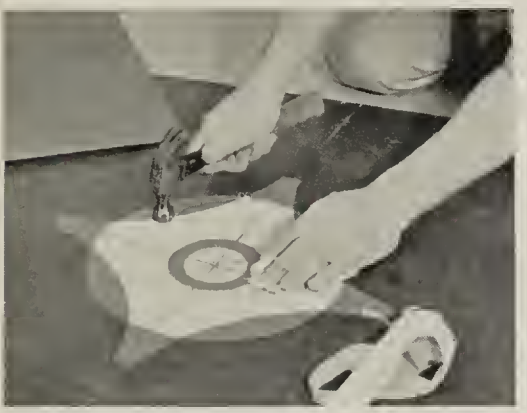


Fig. 179—*Lay the design on the paste, remove the tape, and roll. Moisten the edges and iron the seams.*

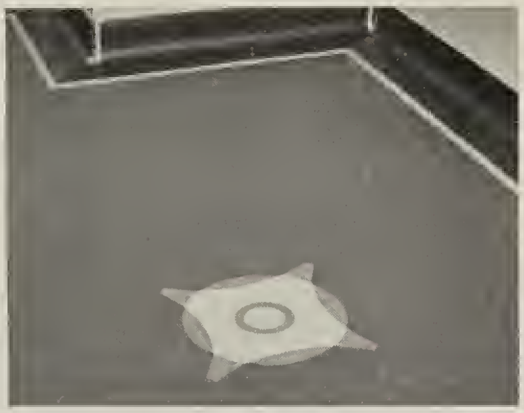


Fig. 180—*The completed design. Note the absence of raised seams and the artistic blending with the field.*

tool, perfect arcs and circles may be cut. See Figs. 182 and 183.

The blades provided with the Custom Floor Cutter are of correct temper and design to permit extremely accurate work to be done, with a minimum of sharpening. However, when necessary, the blades may be sharpened easily by the use of a grinding wheel. The grinding is done at the end, not the side, of the blade. Only occasional honing of the cutting edge is required.

Scribing

With the tool's special scribing point set at the desired distance from the end of the radius rod, an accurate wall scribe may be made as shown in Fig. 184. Best results are obtained when the scribing point is kept on the side of the radius rod, that is away from the mechanic, Fig. 184.

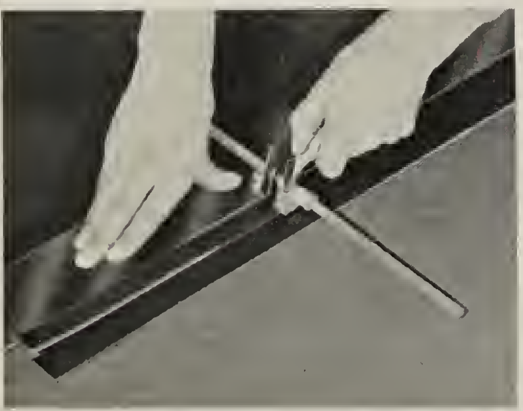


Fig. 181—*Attach the handle of the tool between the blades. Draw one blade along a straightedge as a guide.*

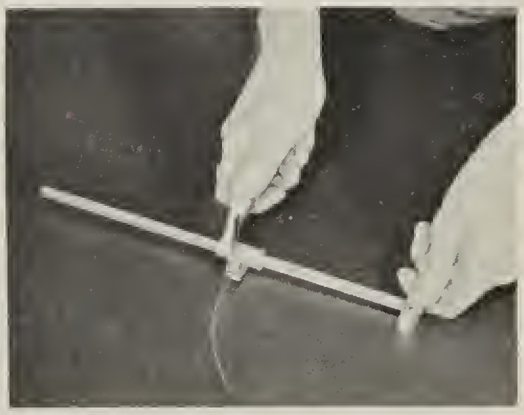


Fig. 182—*By using the radius point at one end of the Custom Floor Cutter, perfect circles and arcs may be cut.*

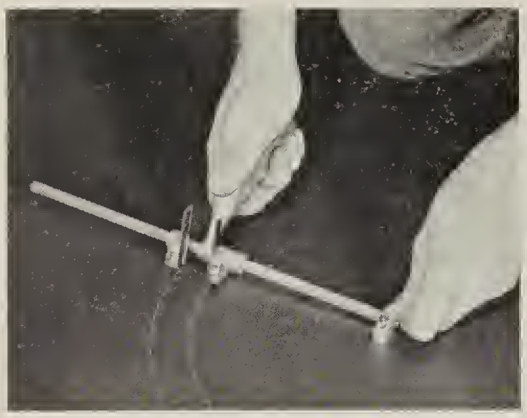


Fig. 183—*The handle is attached to the right of the blade. The left hand holds the other end firmly in place.*

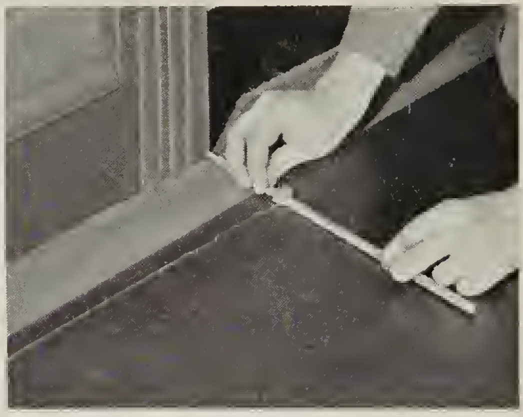


Fig. 184—*With the special scribing point set at the desired width, an accurate wall scribe may be made.*

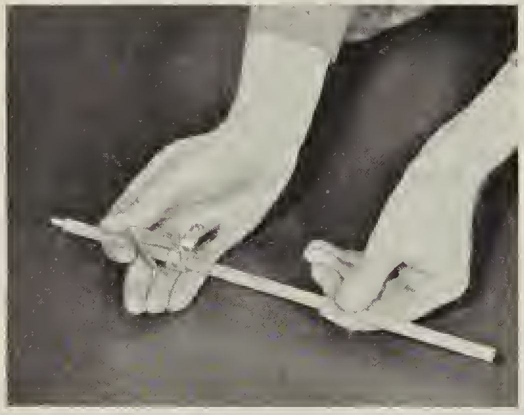


Fig. 185—*The recess scribing attachment is a handy device for fitting linoleum to recesses or raised edges.*

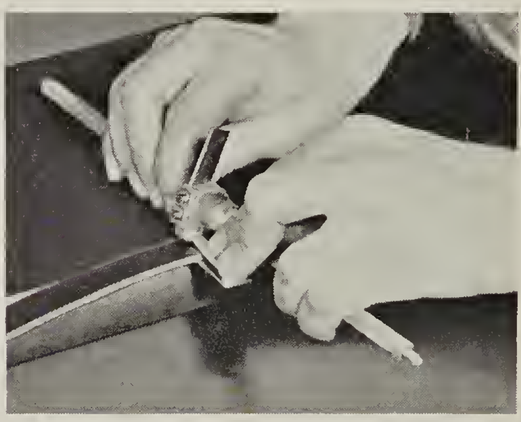


Fig. 186—*The use of the recess scribing attachment in fitting linoleum on a stair tread is convenient and easy.*

The recess scribing attachment, Fig. 185, is a convenient device for fitting linoleum at borders, stair tread nosings, sink and cabinet tops, and other recesses or raised edges. Its use in fitting linoleum on a stair tread is illustrated in Fig. 186.

Armstrong's Universal Scriber

While the Universal Scriber, Fig. 159, differs from the Custom Floor Cutter in construction, the method of laying out Linosets is almost the same.

This new tool: (1) scribes to vertical surfaces, (2) cuts Linostrips around curved surfaces, (3) cuts straight or circular strips from ¼″ to 6″ wide, (4) cuts circles or Linostrips from 1″ to 7′ in diameter, (5) recess scribes to surfaces with or without metal moldings and to metal back or rubber cove base, (6) recess scribes Linowall to linoleum cap strips and moldings.

WALL SCRIBING—As in Fig. 187, fasten and set the pin holder of the Universal Scriber to the bar at the proper distance from the wall. Draw the end of the bar along the wall to scribe the goods. Then cut through the scribed line with a knife.

RADIUS CUTTING—To cut Linostrips around curved tubs, stairs, etc., Fig. 188, fasten the radius attachment to the bar. Attach the handle and both blade-holders, with the knives set about 1/32″ deeper than the thickness of the linoleum and at the proper distance from the tub.

Holding the handle with one hand and steadying the bar with the other, press the attachment against the tub and draw the point along the linoleum. To cut through the goods, make two or more scorings. Since the two blades cut both edges of the strip at once, both exactly match the curve of the tub.

In cutting straight Linostrips, omit the radius attachment and draw one of the two blades along a straightedge.

RECESS SCRIBING—To recess scribe linoleum to metal edgings on stair treads or sink and table tops, cut the linoleum full to lap over the edging, Fig. 189.

Attach the recess scribing attachment (metal cylinder and a recess rod) to the slot in the bar. Place the pin-holder on the bar, with the point directly above the rear face of the lip on the rod. Insert the goods between the pin and the rod. Adjust the

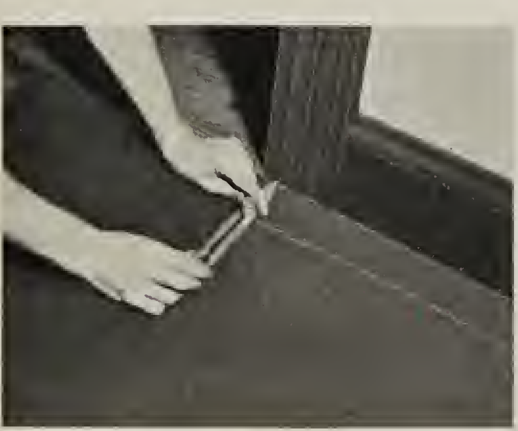


FIG. 187—*Armstrong's Universal Scriber is here used for wall scribing. Its many other uses are described above.*

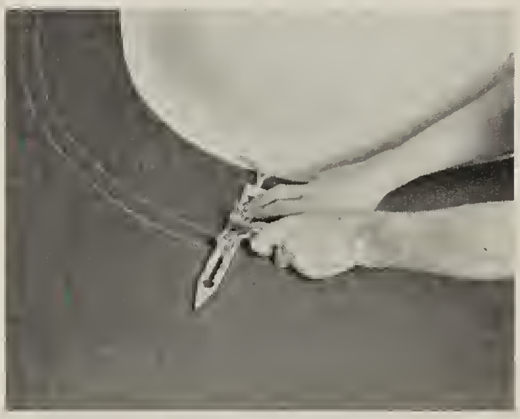


FIG. 188—*A special attachment on the Universal Scriber accurately scores for Linostrips around curved tubs, etc.*

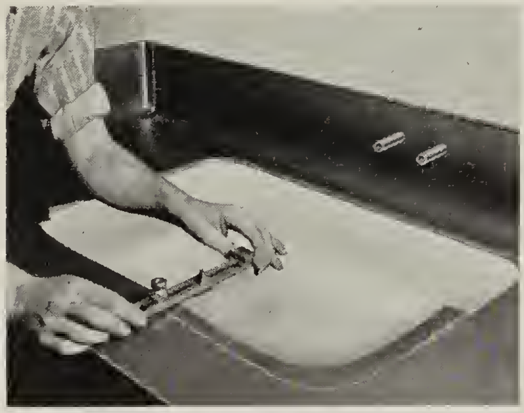


Fig. 189—*The recess scribing attachment of the Universal Scriber makes the tool useful on sink tops and stairs.*

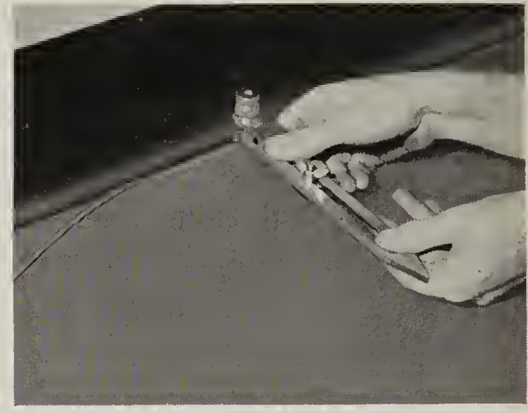


Fig. 190—*The cove base scribing attachment of the Universal Scriber is used with metal back or rubber cove base.*

point to the proper depth and press the inside lip of the rod against the edge to be scribed.

Always make a trial scribe with a scrap of linoleum. If the pin is scribing too full, move it toward the pointed end of the bar. If scribing too short, move it toward the forked end. To scribe the goods, draw the lip of the recess rod along the metal edging. Complete the cut along the scribed line with a linoleum knife.

For recess scribing on counters or tables without metal edgings, use the pointed end of the rod, with the pin point directly over the point of the recess rod.

Cove Base Scribing—Cut the goods to overlap the offset of the cove ¼″ to ⅜″. Attach the pin-holder to the forked end of the bar, Fig. 190, and insert the cove base scribing rod in the cylinder. Set the pin point directly over the face of the lip that will press against the cove offset. (The rod is slotted to let the pin through to the goods.)

Insert the goods between the point and the rod, pressing the lip of the rod against the cove offset. If the trial scribe indicates correct adjustment, draw the tool across the goods. Then cut along the scribed line. Fig. 190.

CHAPTER TWENTY

How to Do Projection Tracing

For certain jobs, special hand-cut insets are desired by the customer. Up to now, the hardest problems encountered in this type of work have been to create appropriate designs and transfer them in the right size to the piece of linoleum for cutting.

To solve these problems, Armstrong has developed projection tracing—a method whereby any one of 40 designs is projected onto the linoleum (or large piece of paper) in the same way that a picture is thrown on a screen by a magic lantern.

The only equipment needed for projection tracing is an Armstrong's Custom-Craft Projector, the loop of film containing the designs, a pencil, and, in some cases, a large sheet of paper.

The projector and film are supplied in Armstrong's Projectoflor and in Armstrong's Custom-Craft Outside Sales Kit. The projector and film can also be bought separately. No special dark room is required. Drawing the shades, even with bright sunlight outside, is usually sufficient. The projector itself can be set on a stepladder or any other convenient support while it is in use.

The designs on the film, Fig. 191, consist of shields, scrolls, fans, etc., as well as two alphabets for use in monograms. Some of these designs can be combined with others to produce a more complicated design. For instance, three initials can be combined with the scroll, as in Fig. 192.

Detailed directions for setting up the projector are supplied with it. To bring the projected design to the desired size, move the projector back and forth on its support. Then when the projector is sharply focused, trace the design on the linoleum or

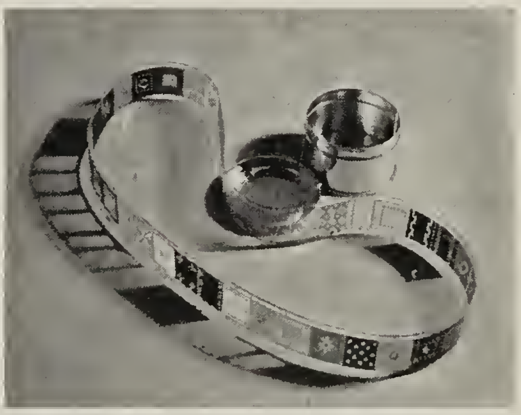


Fig. 191—*The loop of film contains 40 designs which may be projected on linoleum with Armstrong's Projector.*

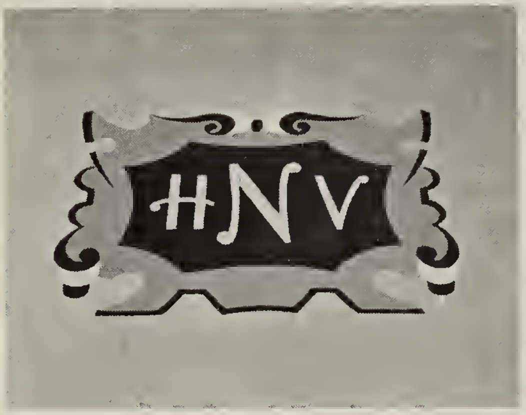


Fig. 192—*Either of two sets of initials on the film can be combined with designs to create attractive effects like this.*

paper. If two or more designs are to be combined into one, project and trace each one separately.

The method of cutting a projection-traced design is exactly the same as for an ordinary hand-cut Linoset. Because the designs are fairly complicated, more skill is necessary than for the simpler types of custom floors; but a good mechanic should have no difficulty in using this method after a little practice.

How to Make a Projection Traced Design

Assume that the design shown in Fig. 192 is to be projected directly on the linoleum; because this method is faster than projecting on paper. The outer scroll is black with highlights of orange. The main area, just inside the scroll, is green. The initials are orange on black.

1. As explained in Chapter XV, draw center lines on the field linoleum, which has been carefully fitted to the room but not yet pasted down. Lines showing where the design is to fall also should be drawn on the field.

2. After deciding upon the size of the design, so that it will not be too large or too small for the room it is to occupy, mark off the desired dimensions on a piece of green linoleum that is slightly larger than the total area of the design. The design is projected and traced onto the green linoleum because the greatest area of the design is green. As an aid to centering the projected design, strike a faint pencil line through the center of the green.

3. Insert the film of designs in the projector.

4. Set the projector on a stepladder or other rigid support. This support should be level so that the design will not be distorted. Then darken the room by drawing the shades.

5. Find the scroll design on the film and project it onto the linoleum, as shown in Fig. 193. To bring the design to the desired size between the pencil lines on the linoleum, move the projector back and forth. Adjust the lens tube as explained until the de-

sign is in sharp focus. Then, to prevent distortion, make sure that the lens tube points exactly at right angles to the surface of the linoleum. This can be checked by measuring between the small crosses that will be found just outside the projected design. The horizontal distance between points should be equal, and the vertical distances should be equal.

6. When the design is properly focused and centered, trace its outline with a pencil on the piece of green linoleum, Fig. 194.

7. Then project and trace each of the three initials, one at a time, as shown in Figs. 195 and 196. Then remove the linoleum from the wall.

8. Draw over the traced lines on the linoleum to smooth any

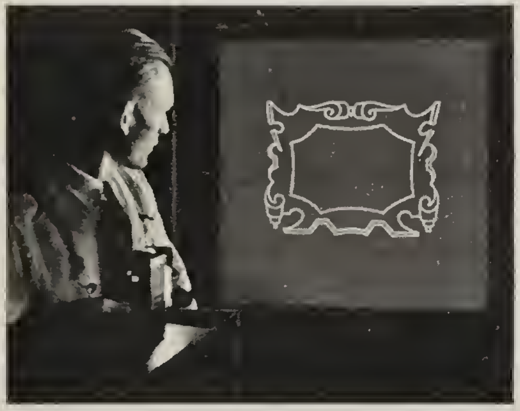


Fig. 193—*Focus the design between the pencil lines. Point the lens tube at a 90 degree angle to the linoleum surface.*

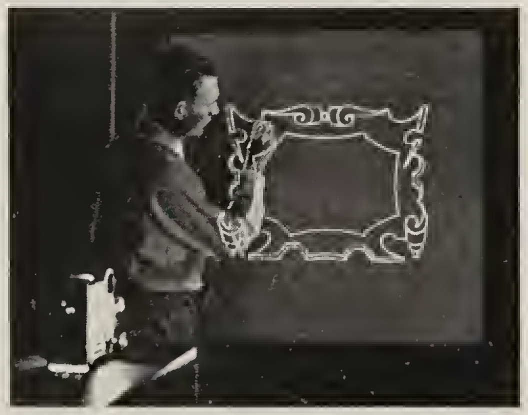


Fig. 194—*When the design is properly focused and centered, trace its outline on the piece of green linoleum.*

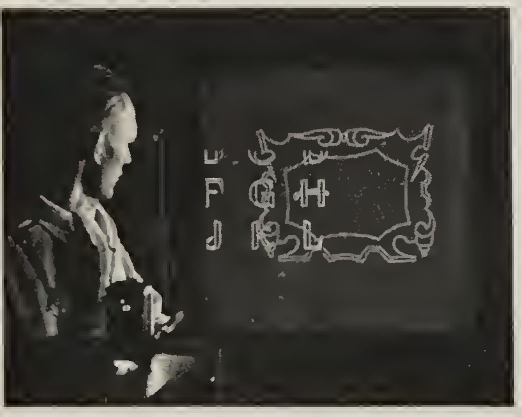


Fig. 195—*With the machine properly placed, project and trace each of the three initials on the green linoleum.*

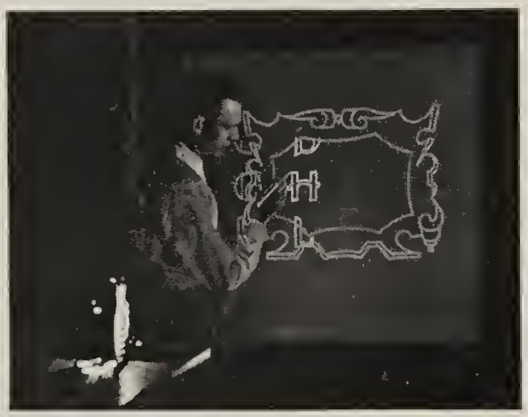


Fig. 196—*All lines that are projected onto the linoleum should be accurately traced with pencil, as shown above.*

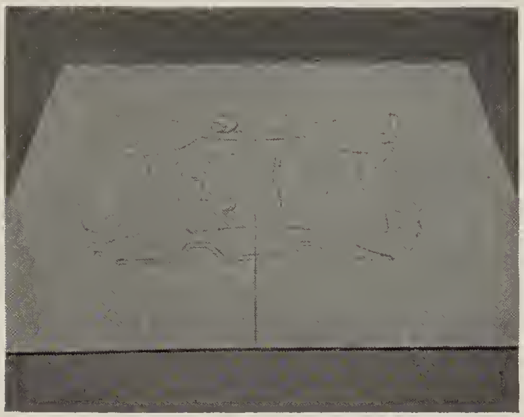


Fig. 197—*Score the green linoleum along all the design lines, but do not cut through the linoleum until later.*

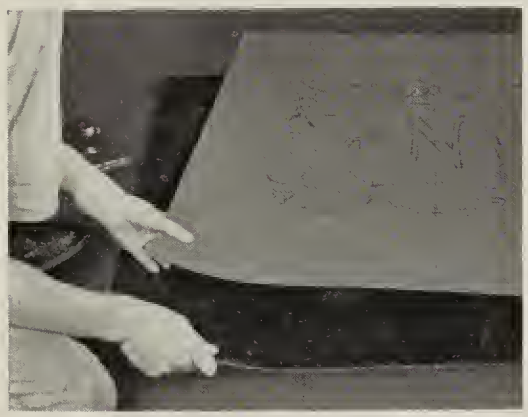


Fig. 198—*Place a piece of black linoleum, the same size as the green piece, beneath the green linoleum.*

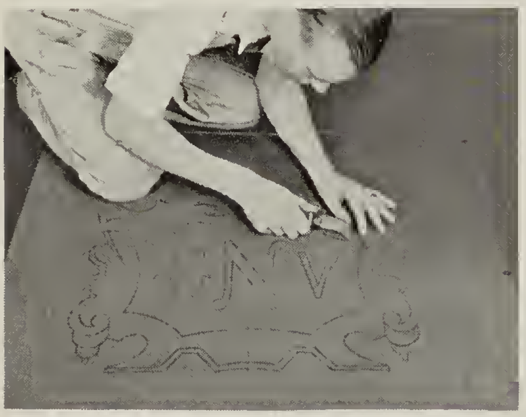


Fig. 199—*With the pieces fastened together, cut through all scored lines on the green, deep enough to score the black.*

unevenness. (If the projection were being made on paper and you wanted to save the drawing for future use, it would be necessary to make a second projection tracing of it, because the first paper tracing would be cut, as described below, in cutting the linoleum.)

9. With a linoleum knife, score the green linoleum along *all* the design lines that were projected and traced onto it, as shown in Fig. 197. Do not score the center line that you drew as an aid to focusing or centering. Do not cut all the way through the green linoleum yet.

10. Place a piece of black linoleum, the same size as the green piece, under the green linoleum. See Fig. 198.

11. Fasten the green and the black pieces together with thumbtacks or adhesive tape to prevent them from moving when the green piece is cut through.

12. With a linoleum knife, cut through *all* lines that you scored on the green piece. Cut only deep enough to score the black piece. This is shown in Fig. 199.

13. Remove the tape or tacks and slide (don't lift) the green piece to one side.

14. Place a piece of orange linoleum under the black piece,

Fig. 200, at all points where orange is to appear in the finished Linoset. Fasten the pieces with thumbtacks or tape as explained above.

15. Cut through those scored lines on the black piece that represent the outlines of the orange parts of the design. See Fig. 201. Cut only deep enough to score the orange piece. Then cut completely through the rest of the scored lines on the black.

16. Remove the tape or tacks and slide (don't lift) the black piece to one side.

17. On the orange piece, cut through the scored lines.

18. Insert the pieces of black in their proper places on the green piece, Fig. 202, removing the corresponding green shapes to do so.

19. Insert the orange pieces in their proper places on the black-green combination piece, Fig. 203, removing the corresponding black shapes to do so.

20. The design is now ready to be laid in the floor. Before handling it, fasten all its pieces together with Scotch tape or adhesive tape, so that it can be handled as one piece and will not fall apart. See Fig. 204.

21. Lay the taped pieces on the carefully fitted but unpasted

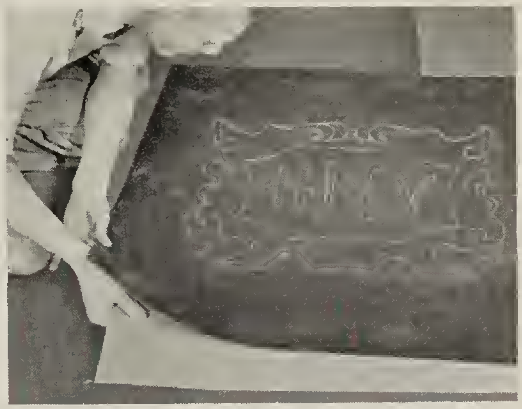


Fig. 200—*Place an orange piece beneath the black at all points where orange is to appear. Fasten the pieces.*

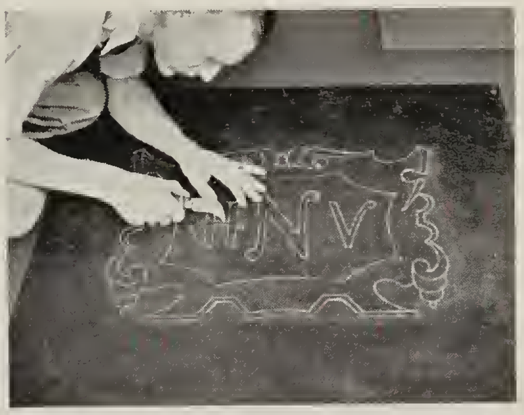


Fig. 201—*On the black, cut through lines representing orange parts of the design. Cut deep enough to score the orange piece.*

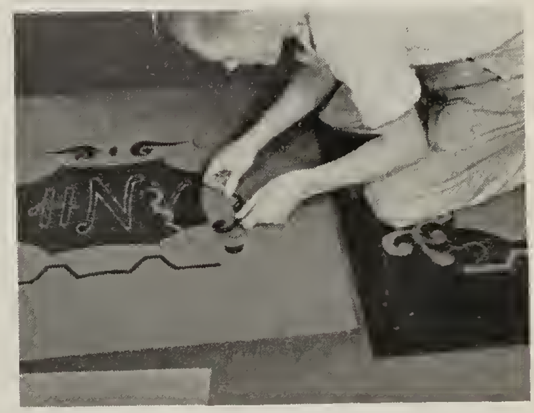


Fig. 202—*Insert the black shapes in the large green piece, removing the corresponding green piece to do so.*

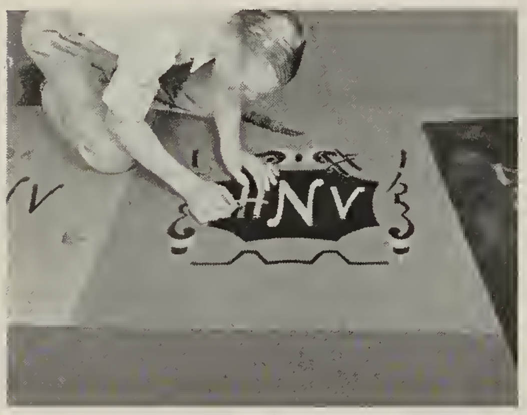


Fig. 203—*To the black-green combination, add the orange shapes, removing the corresponding black or green shapes to do so.*

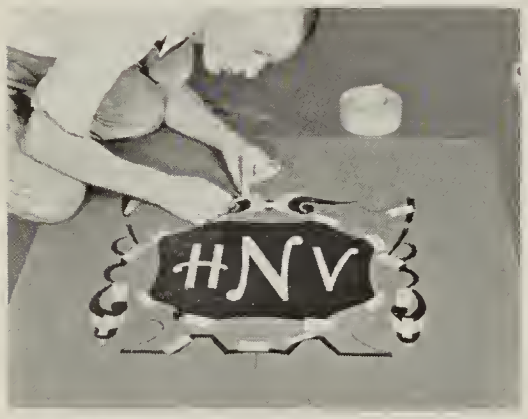


Fig. 204—*Fasten all pieces of the design with Scotch or adhesive tape, so that it can be handled as one piece.*

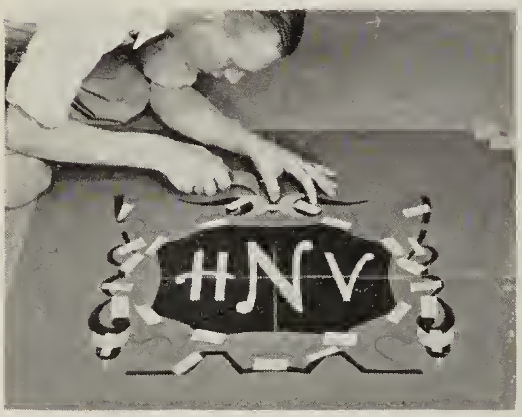


Fig. 205—*Line up the center lines of the design with field. Fix the design to the field to prevent slipping.*

field linoleum; and line up the center lines of the design with the center lines of the field.

22. With weights or adhesive tape, fasten the design to the field, so that it will not slip, as shown in Fig. 205.

23. Remove the weights or tape and slide the design aside.

24. Cut through the scored lines on the field linoleum, as shown in Fig. 206, and remove the cut-out piece.

25. Insert the design in the opening, to check the fit, as shown in Fig. 207. Then remove it and put it to one side until the field linoleum has been pasted down and rolled.

26. Tube back the field linoleum and spread paste over the entire area of the felt or subfloor —including the area that will later be occupied by the design. See Fig. 208. Then replace the field linoleum.

27. Insert the design in the opening in the field where paste has already been spread.

28. Roll the design and field linoleum with a linoleum roller, as in Fig. 209. Then carefully remove the adhesive tape from the parts of the Linoset, taking care not to pull out any parts.

29. With a damp cloth, remove all paste from the surface.

30. If any parts of the design are not flush with the rest of the floor, dampen the material slightly and then "iron" down the protruding parts with the smooth head of a hammer.

When Paper Is Used

Where the design has been projected and traced on paper rather than directly on the linoleum, the steps are the same as explained above, except that three extra steps are necessary. These steps are as follows:

1. Paste the sheet of traced paper to the surface of the green linoleum, keeping it smooth and free from wrinkles.

2. Then with a linoleum knife, cut through all the design lines on the paper, cutting deep enough to score all these lines on the green linoleum. Do not cut along the centering line on the paper.

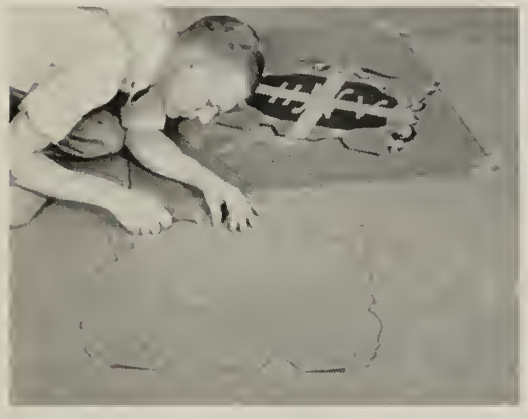


Fig. 206—*Sliding the design to one side, cut through scored line on the field, and remove the cut-out piece.*

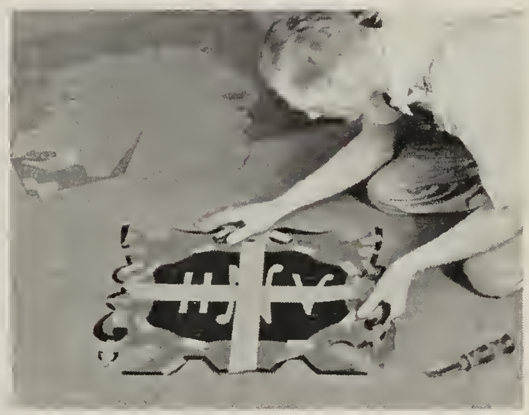


Fig. 207—*Insert the design in the opening, to check its fit. Then remove it until field is pasted and rolled.*

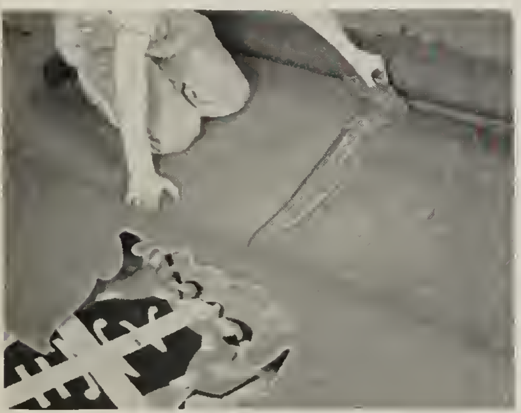


Fig. 208—*Tube back the field and spread paste over the entire area, including the area to be occupied by the inset.*

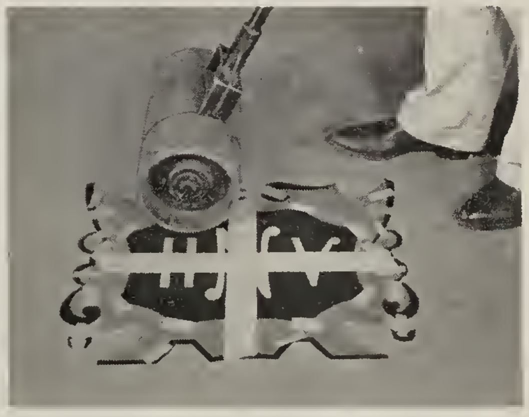


Fig. 209—*Insert the design in the field, roll the design and field, and carefully remove the adhesive tape from the floor.*

Do not cut all the way through the green linoleum.

3. Remove the paper from the scored green linoleum and, starting at Step No. 4 above, do everything else as explained.

In designs where a greater number of colors are used, these steps are carried out in the same manner—i. e., by progressing from the most prominent color to the smaller pieces.

With certain designs, the mechanic can easily work out his own variations of this method, since the number of projected designs is so great that a single method may not apply at all.

SECTION III

CHAPTER TWENTY-ONE

Installation of Felt-Base, Linoflor, and Mastic Armoflor

Plain, Jaspé, Marbelle, Monobelle, Straight Line Inlaid, Embossed Inlaid, and Printed linoleum should always be pasted over felt over wood subfloors.

Inlaid Linoflor, Printed Linoflor, and Quaker Felt-Base Floor Covering may be pasted direct to subfloors without lining felt. In general, the method over wood is the same as that used when linoleum is pasted to a concrete subfloor without lining felt.

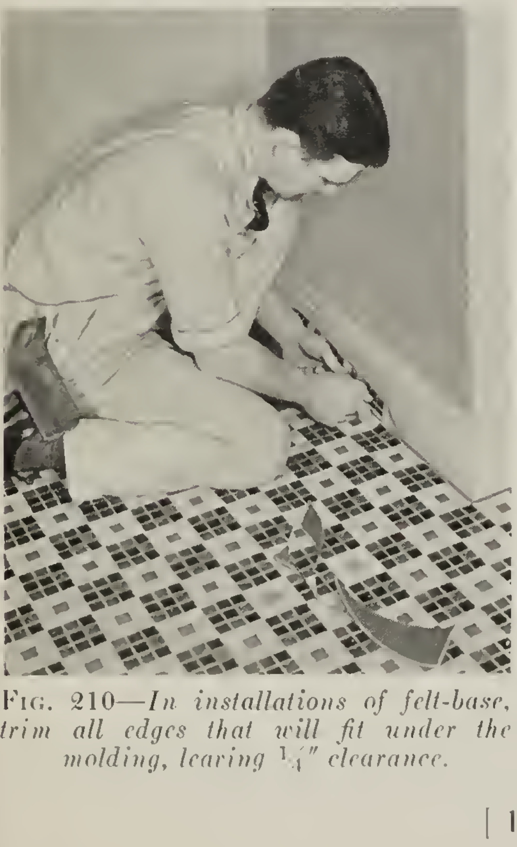


FIG. 210—*In installations of felt-base, trim all edges that will fit under the molding, leaving ¼″ clearance.*

Printed linoleum and felt-base may also be installed without pasting—*i. e.*, laid by the loose-lay method, as follows:

1. Raise the quarter-round molding off the floor.

2. Smooth and sweep the floor, driving down all protruding nails and leveling all knots and splinters.

3. Match and fit the strips in the same way as patterned linoleum. (See Chapter VII.)

4. Trim all edges that will fit under the molding so that there is ¼″ clearance, as shown in Fig. 210. Cut door jambs and other places where there is no molding trim so that there is at least 1/16″ clearance. (These clearances allow the material to "grow" after it is laid.) Lay the strips of material *across* the floor boards if possible. (This helps to keep the outline of the boards from showing through.)

5. Do not tack or paste the seams to the subfloor, because

this may cause cracking or buckling when the material grows. Instead, lay a strip of heavy wrapping paper or shade cloth (not canvas) under the entire length of the seam. Leaving the bottom face of the paper or shade cloth unpasted, spread linoleum paste on the top face of the cloth or paper.

6. Lay the edges of the material in the paste, and rub them well into it with your foot. (This method holds the strips of material together as a unit, but it does not fasten them to the floor and prevent growth.)

7. In replacing the molding, double a piece of scrap back on itself, as shown in Fig. 211. Place it between the molding and the goods, Fig. 212. Then nail in the molding. (The piece of scrap holds the molding high enough to prevent binding when the material grows.)

Repeat this at each point where molding is nailed.

8. A few weeks later, go back to the job to find out whether the material has buckled as a result of growing. If it has, trim it carefully to relieve the strain that is causing the buckling.

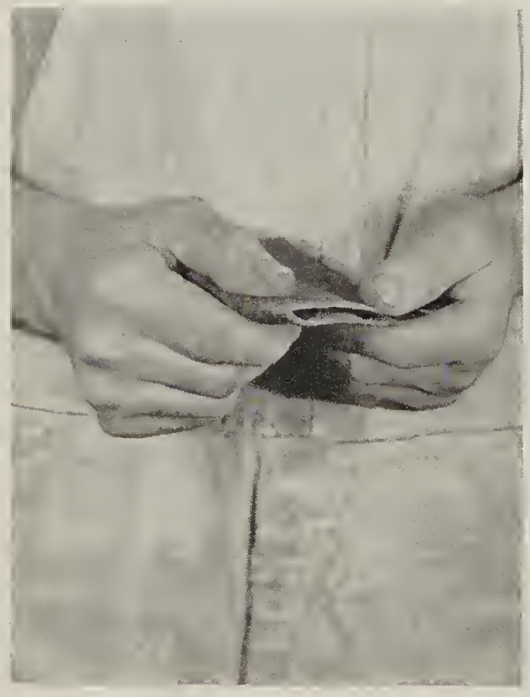


Fig. 211—*In replacing the molding, double a piece of scrap linoleum back on itself in the manner shown above.*

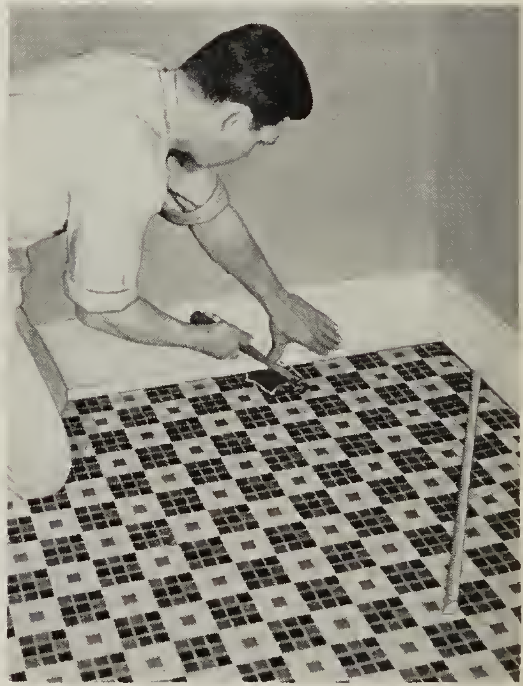


Fig. 212—*Place the scrap between the molding and goods, along the wall at the point where molding is to be nailed.*

Loose-Laying around Pipes and Radiators

To install a loose-lay job around pipes and radiators, the steps are as follows:

1. Cut the material slightly longer or wider than the room, so that some of the material flashes up the wall. This provides enough material for fitting.

2. From a piece of scrap, cut a strip 1″ x 24″. Slide one end of it under the field and butt the other end against the wall or baseboard. (The left hand of the man in Fig. 213 indicates the strip.)

3. Lap the wall-end of the strip back on the underside of the field material, as shown in Fig. 214. With chalk, mark the underside of the field material at the end of the strip.

4. Repeat Steps 2 and 3 at the other side of the radiator. Then strike a chalk line to connect the two marks. Remove the 1″ x 24″ strip, and cut the material along this chalk line, Fig. 215. (If the wall behind the radiator is very irregular, it may be necessary to perform Steps 2 and 3 at one or more points under the radiator.)

5. Replace the field material so that it falls against the radiator, as shown in Fig. 216. Then cut it along the inside of each

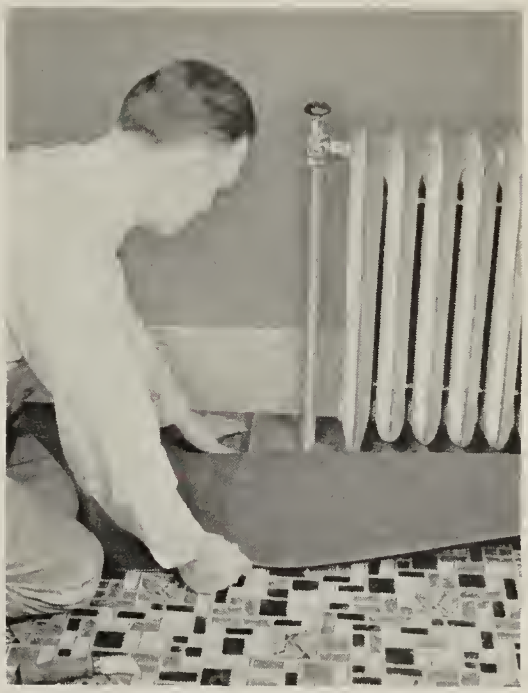


Fig. 213—*Slide one end of the strip under the field and butt the other end against wall or baseboard.*

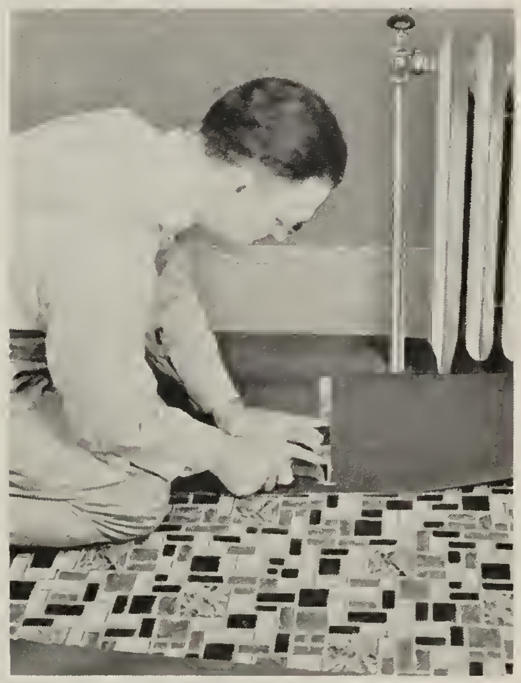


Fig. 214—*Lap the wall-end of the strip back on the underside of field. Mark the field at the end of the strip.*

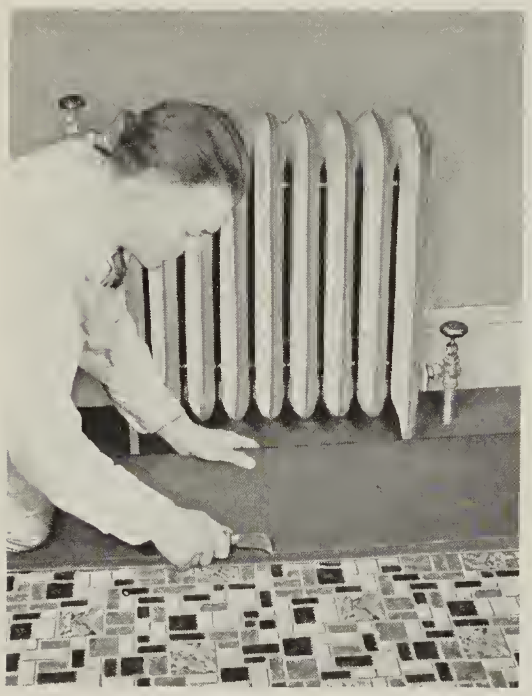


Fig. 215—*Chalk a line connecting the marks on either side of the radiator. Then cut along this chalk line.*

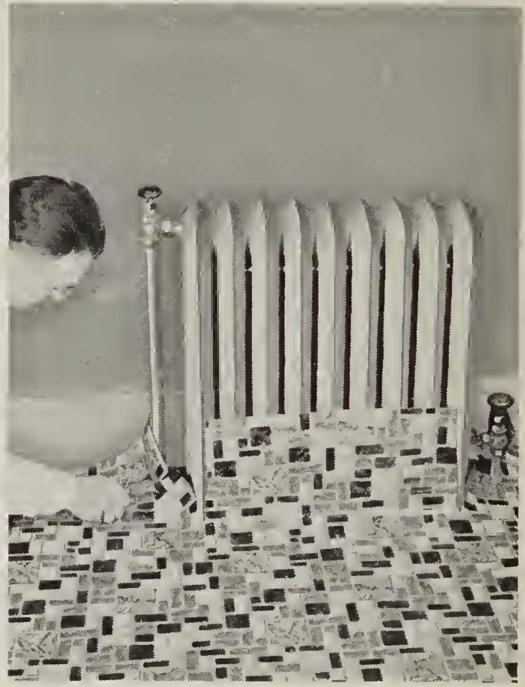


Fig. 216—*With field against the radiator, cut along the insides of legs and pipes and across in front of pipes.*

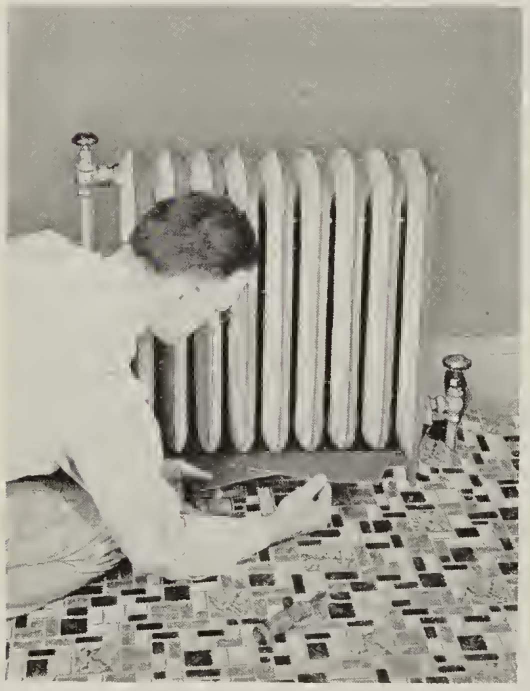


Fig. 217—*The "safety-cut" permits overlapping so that the material can be pushed against the wall under radiator.*

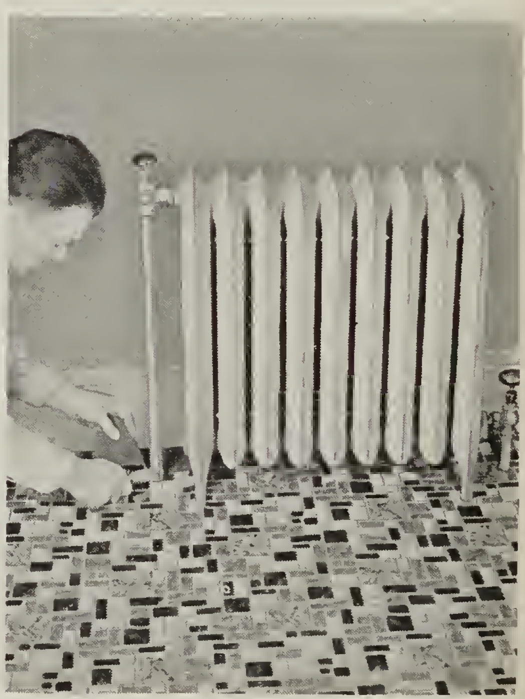


Fig. 218—*Finish cutting and fitting the field around the pipes and legs. Then slip the floor covering into place.*

leg and pipe, cutting up to the front of each leg and pipe. (See Fig. 216.) Also cut across in front of the pipes as shown.

6. In the part that will fall under the radiator, make a "safety-cut," as shown in Fig. 217. This permits the two parts of this section to be overlapped, so that the material can be pushed under the radiator and against the wall.

7. Finish cutting and fitting around the pipes, as shown in Fig. 218. Then slip the floor covering into place.

Handling and Installing Twelve-Foot Felt-Base

Through the use of Armstrong's Twelve-Foot Felt-Base Floor Coverings, either Quaker or Standard, many rooms can be covered without seams. The material is easy to handle and install if the right procedure is used. However, due to its width, a few special operations are necessary. As soon as the mechanic becomes familiar with these methods, installing twelve-foot-wide goods is no more difficult than installing narrower widths. This will be clearly seen from the following notes on preliminary handling and from a step-by-step description of installations in two typical rooms.

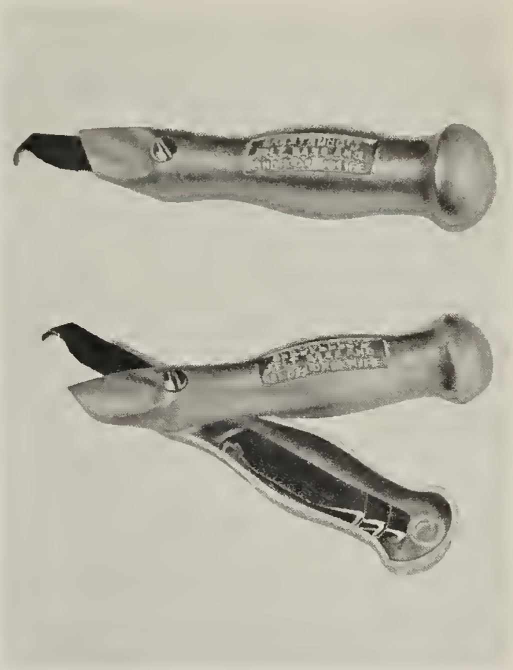


Fig. 219—*The hooked blade is a feature of the Felt-Base and Linoflor Knife. Extra blades are stored in the handle.*

Measuring, Cutting, and Packing

In the workroom, cut the material 3″ wider than the widest dimension of the room, and 3″ longer than the longest dimension. Cutting in the workroom is important. Remember, there is not room to do it on the job. Cut closely to the 3″ waste allowance. Extra waste complicates the installation problem.

Roll the goods face out, so that the length of the roll equals the shortest dimension of the goods. Make a firm, tight roll.

Tie the roll with heavy twine at the center, placing cardboard or scrap felt under the twine

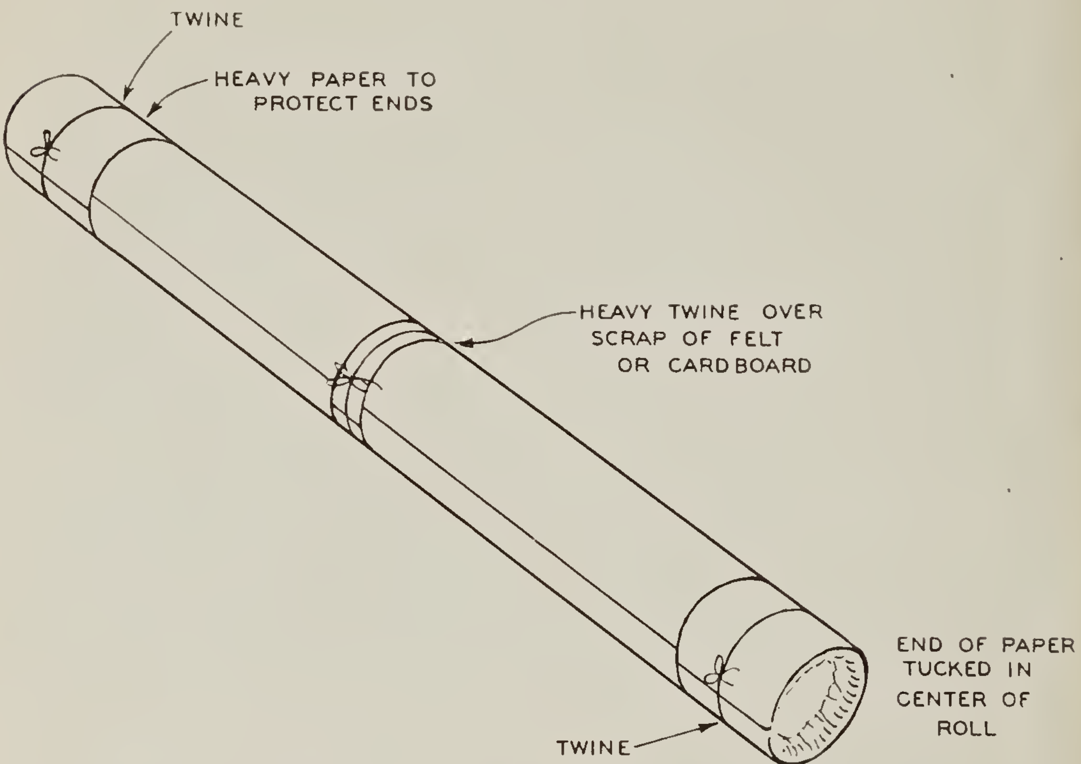

TWINE
HEAVY PAPER TO PROTECT ENDS
HEAVY TWINE OVER SCRAP OF FELT OR CARDBOARD
END OF PAPER TUCKED IN CENTER OF ROLL
TWINE

Fig. 220—*When the roll has been protected as shown above, the entire roll is then wrapped with heavy paper. For extra protection, cardboard may be used at the ends.*

to prevent it from marring the surface of the goods, Fig. 220.

At each end of the roll, wrap several turns of heavy wrapping paper. Allow 7″ or 8″ of the paper to extend beyond the ends of the roll. This overhang is then tucked in to protect the ends, and the paper is fastened with twine. See Fig. 220.

The entire roll is now wrapped in heavy wrapping paper, which is tied at the ends and center.

If the roll may receive very rough handling, place cross-shaped pieces of cardboard at each end of the roll and bend back the flaps. These protectors are often cut from old cardboard cartons. Ordinarily, however, this extra protection is not necessary.

If the delivery truck is not long enough to take the long roll, tie it firmly to the outside of the truck, resting it on the fenders. Special strap-iron supports can be built on the truck to facilitate this operation if desirable.

Installing in Single Rooms

When installing the material, it will save considerable time to have a helper, although simpler jobs can be done by one man. The procedure is as follows:

1. Disconnect and remove refrigerators, stoves, radiators, doors, and any other movable furniture or fixtures.

2. With a pinch-bar, raise the quarter-round molding $\frac{1}{4}''$ from the floor. If parts of the wall extend into the room, remove the quarter-round. Then sweep the floor, check it for loose boards, and hammer in all loose nails.

3. Select the most regular *long* side of the room as the wall to which the goods will be fitted first. In a kitchen, this is ordinarily the side opposite the sink. *The selection of the right starting wall is very important. It should always be a long side of the room.*

4. Carry the rolled-up material into the room, after removing the wrappings, and *lay it diagonally* across the short dimension, so that it will unroll towards the starting wall as shown in Fig. 221 (where the starting wall is CD).

5. The helper and the mechanic unroll about 5′ of the material, face up, as shown in Fig. 221. Then the mechanic and the helper each take one of the

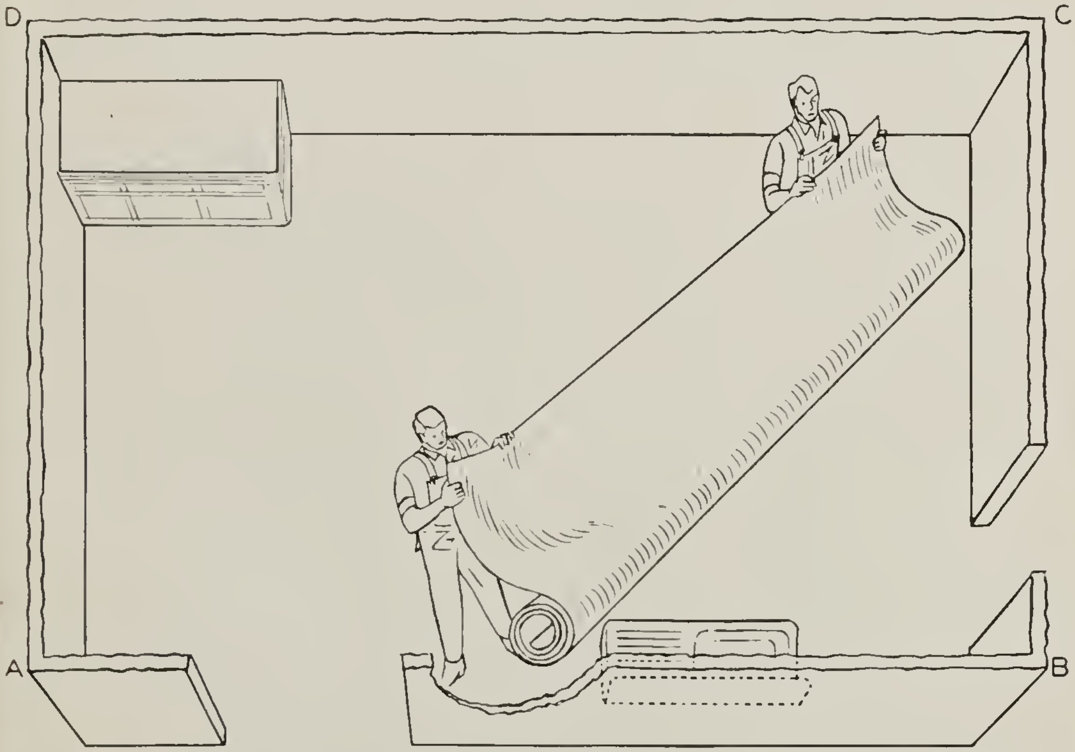


Fig. 221—*The roll is laid diagonally in the room, face up. It is pointed so that it will unroll toward the most regular long side of the room—in this case, CD.*

free ends of the goods and raise it from the floor, so that it forms a U, which can be held by the helper, as shown in Fig. 222. The mechanic then goes to the opposite end of the roll and lifts one end of it off the floor.

6. The goods is now unrolled back towards Wall BC, as shown in Fig. 223. The goods is gradually swung as it is unrolled, so that the edge of the goods becomes parallel to the starting wall. In this example, the starting wall is CD.

As the mechanic works towards Wall BC, he forces the goods against Wall CD, so that it butts to the wall over the molding. At the same time, the helper—still holding up both ends of the roll in a U-shape—works towards Wall DA. He holds the goods clear of the cabinet or other projections.

7. When the material is entirely unrolled, the mechanic steps onto it and *flashes* it up Wall BC, as in Fig. 224. The helper, holding the bottom of the U off the floor, *butts* it to AD above the quarter-round, Fig. 224.

8. After making sure that the material butts to Wall CD at all

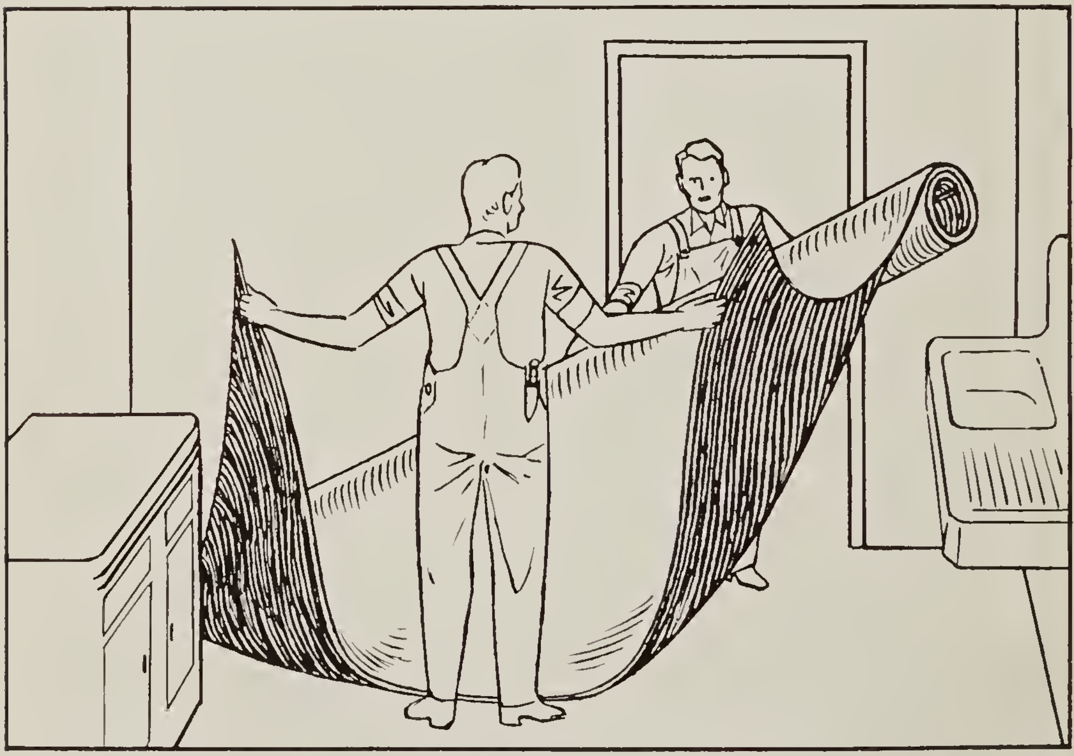


Fig. 222—*After unrolling about 5 feet of goods, the mechanic and helper lift the ends to form a U. Then the helper holds the U while the mechanic unrolls towards BC.*

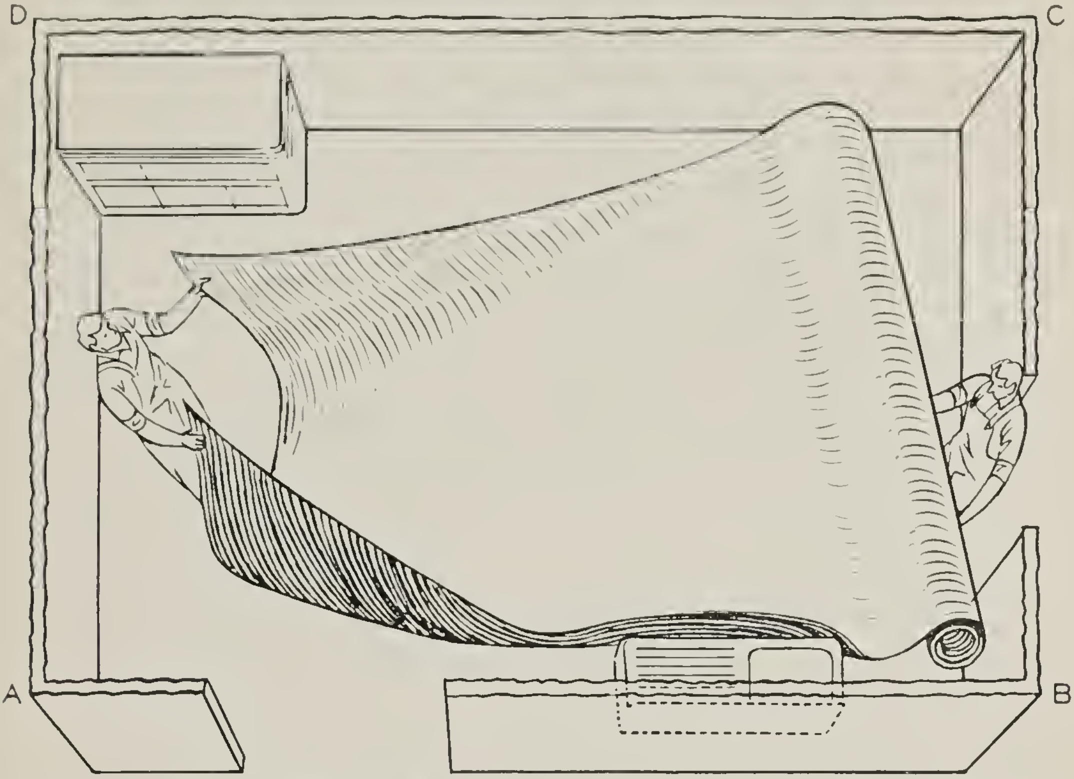


Fig. 223—*Butting the end of the roll to Wall CD, the mechanic works towards BC while the helper works towards AD. The edge is brought parallel to CD.*

possible points, the mechanic crosses to the cabinet, as shown by the dotted line in Fig. 224, and cuts in the side and front of the cabinet at Corner D. As he does this, the helper holds the goods lightly to take the strain.

9. The mechanic then works around the room, cutting in the sink first and then the doorways. The helper works along with him, holding up the goods to take the strain and prevent tearing as in Fig. 224.

All during the work, the mechanic should watch for buckling caused by improper fitting. He should immediately find the point of strain and cut in enough clearance to relieve it.

10. *At the walls, the material must be cut so that there will be a clearance of from ¼″ to ⅜″ between the end of the goods and the wall line.* This clearance is for "growth" and will greatly reduce the amount of retrimming that will be necessary.

11. When the quarter-round is replaced, do not force it tight against the goods; this will cause buckling when the mate-

rial grows. Instead, leave the molding far enough above the goods to allow it to move freely.

12. At doorways or other places where there is no molding, allow at least 1/16″ clearance.

13. Cutting is best done with Armstrong's Felt-Base and Linoflor Knife, but a linoleum knife can be used. In either case, the blade should be held 45 degrees from the wall—not vertically, as is the usual way.

The 45-degree angle lifts the goods away from the wall and prevents the knife from marring the woodwork. With a little practice, it is easy to maintain a uniform clearance with the knife at this 45-degree angle.

Installing Twelve-Foot Material through Doors in Double Rooms

It is often desirable to run twelve-foot felt-base floor covering from one room through the doorway to a second room, without a seam. The handling of the material is somewhat the same as in single rooms with built-in cabinets or offsets.

1. The material is laid diagonally in the larger room and lifted into a U, as in the single room. The helper, holding the U,

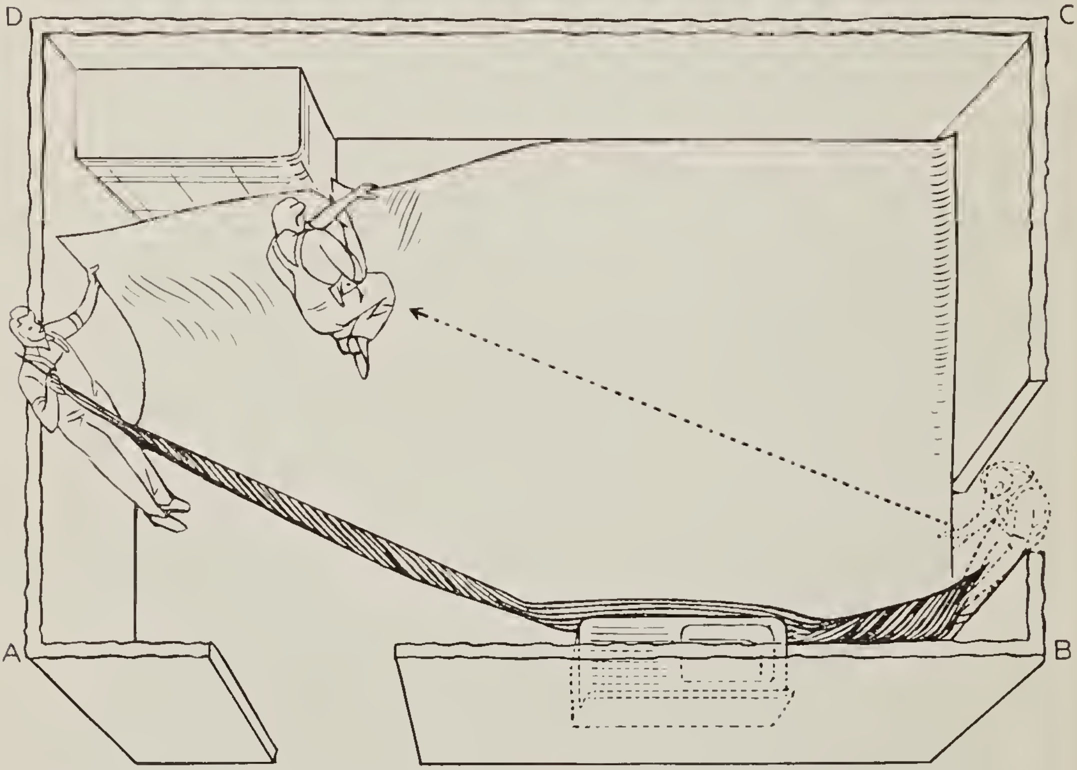


Fig. 224—*While the helper holds up the ends to relieve strain, the mechanic flashes the goods up BC and then crosses over to cut in the side and the front of the cabinet.*

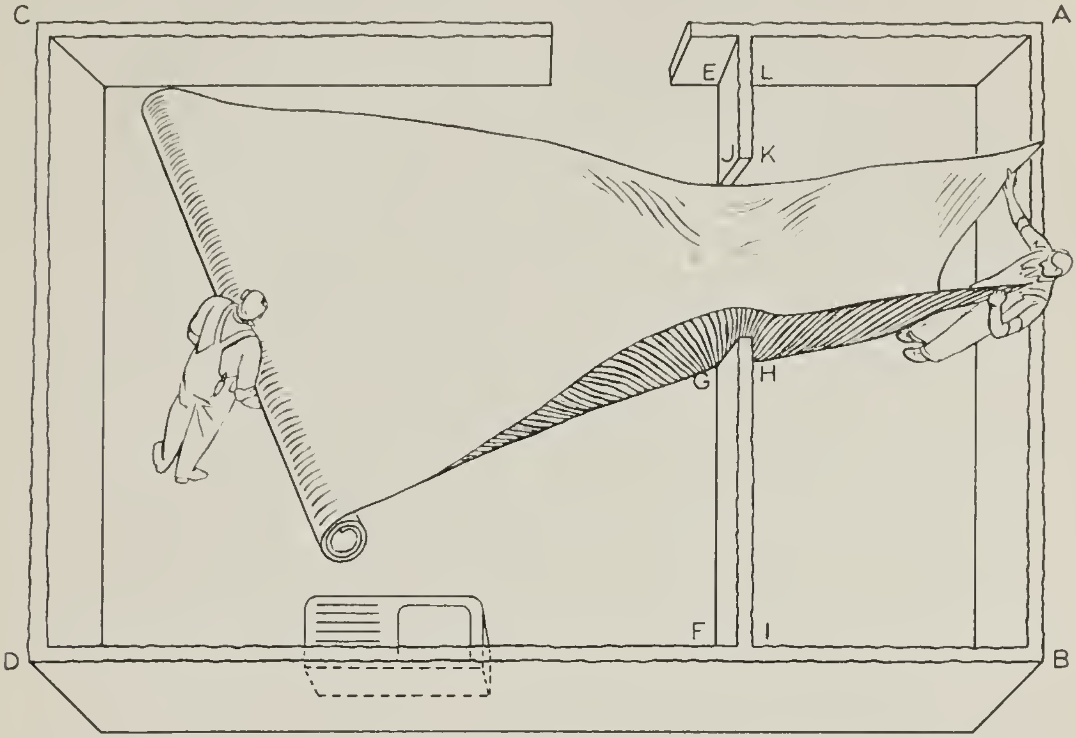


Fig. 225—*Where the goods is to be laid through a doorway without seams, the helper carries the goods from the larger to the smaller room while the mechanic unrolls.*

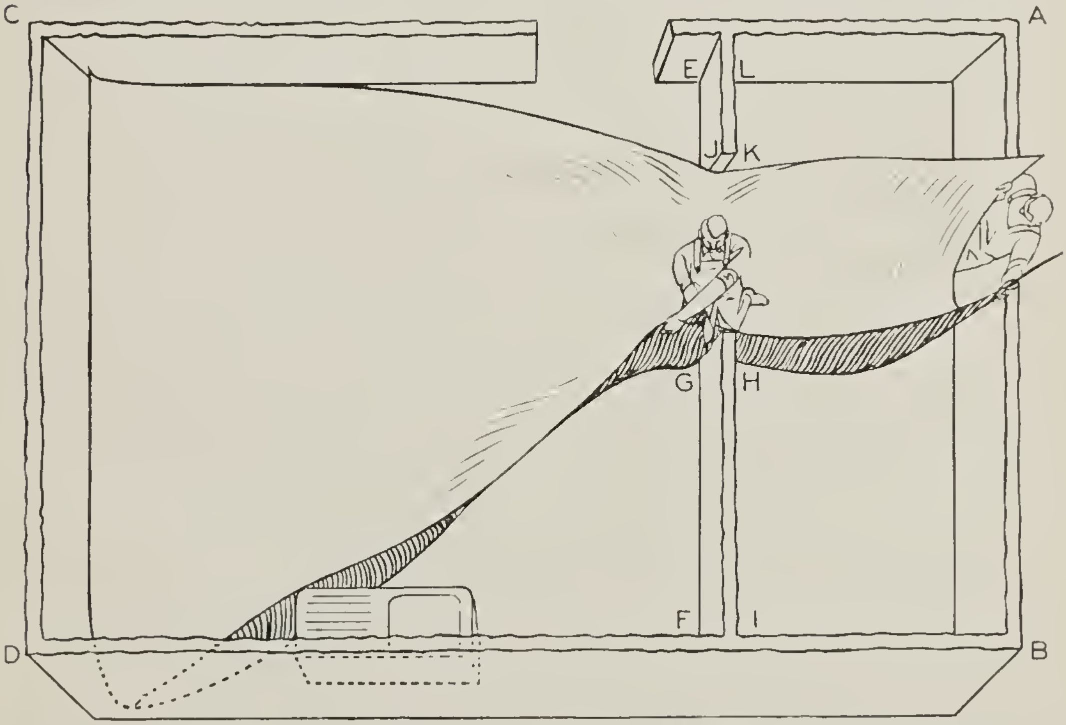


Fig. 226—*When the mechanic has flashed the goods up Wall CD and the helper has butted it to Wall AB, the mechanic cuts in the door frames and other fixtures as shown.*

backs through the doorway into the smaller room as the mechanic unrolls towards Wall CD, as shown in Fig. 225.

2. Butting the end of the roll against Wall CE, the mechanic finishes unrolling and flashes the goods up Wall CD.

3. The helper butts his end of the goods to Wall AB above the molding, as shown in Fig. 226.

4. While the helper holds up the ends to relieve strain, the mechanic cuts in one side of the door frame, so that the material may be fitted against Wall GF. See Fig. 226 on page 165.

5. The mechanic then cuts across the face of the door frame, GH, and makes another cut that permits the goods to fit against Walls HI and IB.

6. The mechanic then cuts in the opposite side of the door frame, so that the goods can be fitted to CE, LA, JE, and KL.

7. The mechanic then cuts in the sink, doorways, and wall lines in the manner explained in the section on jobs in single rooms.

CHAPTER TWENTY-TWO

The Care of Linoleum and Felt-Base Floors

Linoleum and Linoflor

After allowing the linoleum floor to set for at least 12 hours, the mechanic or customer should wash it with a solution of Armstrong's Floor Cleaner, thoroughly rinse it with clear, cold water, and apply at least one thin coat of Armstrong's Linogloss Wax before use.

The linoleum mechanic should always instruct the customer how to maintain the floor in the manner that Armstrong recommends. This method, which has been carefully developed and tested, insures long life and pleasing appearance.

Linoleum should be washed with a solution of Armstrong's Floor Cleaner in lukewarm (not hot) water. This should be applied with a mop to avoid excess water. Fig. 227. One cupful of cleaner to a pail of water (10-qt. bucket) is usually enough. On very dirty floors, or where complete wax removal is desirable, the cleaner may be used half or even full strength. One quart of the cleaner (diluted as first noted) will clean 500 to 800 square feet.

Scrubbing with a stiff bristle either by hand or with a floor machine (Fig. 227) will aid in both cleaning and wax removal. Steel wool (fine or zero grade) wetted with cleaner is effective for removal of stains and spots of old discolored wax.

After the cleaner has been applied, it should be thoroughly rinsed off with clear cold water, and the floor allowed to dry.

Soap and washing powders containing abrasives and free alkalis should never be used on linoleum. Armstrong's Floor Cleaner was developed especially to provide a safe, economical cleaner for linoleum.

When the floor has dried after cleaning, Armstrong's Linogloss Wax should be applied with a cotton cloth mop or with a Linogloss Applicator, Fig. 228, which can be supplied with a 6″ or 9″ head. The head is double-faced with high quality lamb's wool, which insures even distribution of wax on the linoleum.

The applicator should always be washed with warm or cold water after use. The lamb's wool

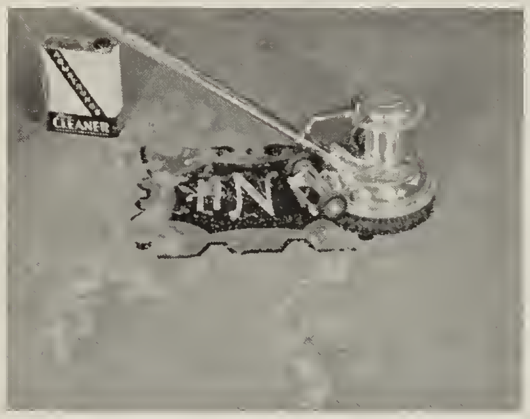


FIG. 227—*Wash with a solution of Armstrong's Cleaner in lukewarm water, and rinse with clear, cold water.*

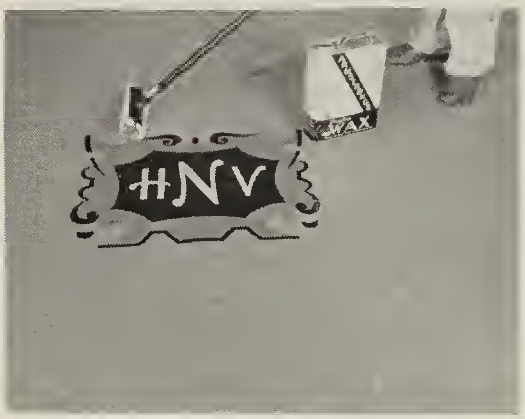


FIG. 228—*When the floor has dried, apply Linogloss Wax with a cotton cloth mop or with the Linogloss Applicator.*

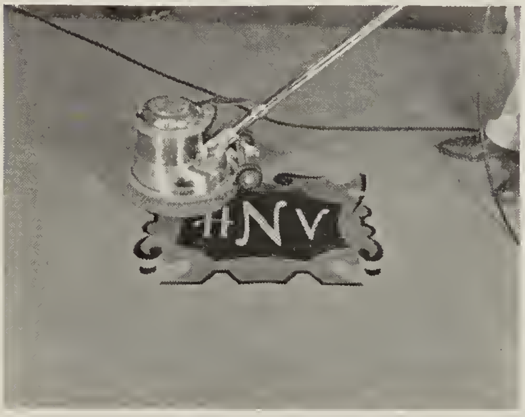


FIG. 229—*For a high glossy finish, buff the wax either with a weighted brush or an electric polishing machine.*

on the head should never be removed for drying because it will shrink. Just wash it with either warm or cold water.

Linogloss is a water-emulsion wax containing no solvents injurious to linoleum.

The wax should be spread as thin as possible on the surface of the linoleum, with straight strokes in one direction only. In about one half hour, it will dry to a hard, durable, lustrous finish. If a high glossy finish is desired, the wax should be buffed with a weighted brush or an electric polishing machine, as shown in Fig. 229.

Do not use lacquer, varnish, shellac, or floor oil on linoleum floors. Many varnishes have a yellowish cast which darkens the pattern. Some varnishes, which appear to be very transparent, will turn white when water is spilled on them. These same objections may apply to shellac. Floor oil usually does not evaporate entirely, but remains more or less on the surface to collect dirt and dust.

The best rule, therefore, is never to use lacquer, varnish, shellac, or oil on linoleum. Use Armstrong's Linogloss Wax only.

Armstrong's Linogloss Wax and Armstrong's Floor Cleaner are supplied in 1-pint, 1-quart, ½-gallon, 1-gallon, and 5-gallon cans, and in 15-, 30-, and 55-gallon drums.

The daily care of a floor that has received one or more applications of Linogloss Wax consists of brushing floor with a soft hair broom or dry mop to remove dust and dirt. An occasional damp-mopping, with clear water only, will keep the linoleum in good condition. Floors maintained in this manner should not require frequent scrubbing.

Felt-Base Floor Coverings, Printed Linoleum, and Printed Linoflor

For washing felt-base floor coverings, Printed linoleum, or Printed Linoflor, use Armstrong's Floor Cleaner or a mild soap in lukewarm water. Rinse with clear water and, when dry, apply a coat of Armstrong's Linogloss Wax. Rewax as appearance requires. Strong soaps and cleaners, or those containing gritty, abrasive materials should never be used.

An alternate method is to apply a coat of Armstrong's Brushing Lacquer once or twice a year. Never apply the lacquer over wax. If the material has been waxed, continue to maintain it with wax. (Brushing lacquer should not be used on any type of linoleum except Printed linoleum.)

Never use shellac, varnish, or similar finishes on printed felt-base floor coverings.

For best results, the floor should be dry-mopped daily and waxed often with Linogloss.

Furniture Rests

Although linoleum is resilient, heavy furniture or machines are likely to dent it after a time. Even when these are equipped with ordinary wood or metal casters, there is a danger of denting. Therefore, these casters should be removed and replaced with one of the various types of furniture rests recommended by Armstrong. "Dome type" rests do not have a large enough bearing surface and should be replaced. Flat glass or metal cups are satisfactory. Wheeled equipment should have large, soft rubber tires. The several types of rests available are described below. Those included in the Armstrong Line will be found listed in the price list.

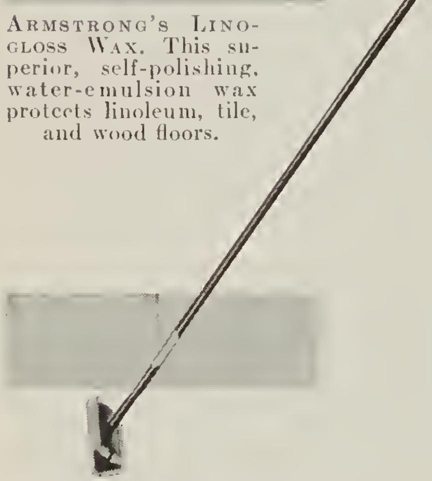
"Cup Type"

Hard-surface cups are made to fit square or round legs.

Round cups are ideally suited for use as caster cups or for use under the legs of stoves, refrigerators, tables, or radiators.

Armstrong's Linogloss Wax. This superior, self-polishing, water-emulsion wax protects linoleum, tile, and wood floors.

Armstrong's Floor Cleaner. A safe, effective, and economical product for cleaning all types of floors except rubber tile.



Linogloss Applicatior. Used to spread Armstrong's Linogloss Wax. Supplied with a 6- or 8-inch head, double faced with lamb's wool.

Armstrong's Brushing Lacquer. An alternate maintenance material for protecting printed linoleum, or felt-base rugs and floor covering.

Fig. 230—*Floor Cleaner is a safe cleaner for linoleum floors. Linogloss Wax contains no injurious solvents. The Linogloss Applicator comes with a double-faced head of lamb's wool. Brushing Lacquer is for use on printed materials only.*

"Socket Type"

This type is used to replace casters and fits into the caster socket. A flexible swivel joint allows the base to remain flat on the floor when chairs are tilted.

"Nail Type"

These slides offer complete floor protection at moderate cost. Each hard-composition slide is equipped with a sharply pointed nail that is readily hammered into the table or chair leg. The nail is attached to the composition base with a swivel joint that permits furniture to be tilted without lifting the base off the floor.

CHAPTER TWENTY-THREE

Making a Material Estimate

This chapter will suggest the things to be kept in mind when making a material estimate, and will give an example of an actual job of estimating.

A material estimate is a list of materials, sundries, and accessories required for a complete installation in a given area, according to specifications.

Hints on Estimating

1. A material estimate should be made only from an accurate sketch or blueprint. Check dimensions and mark the estimate to correspond with the date of the sketch or blueprint.

2. Use the square yardage of the room or rooms as the square yardage of lining felt required.

3. To estimate the quantity of linoleum paste required, divide the square yardage of the room by the spreading capacity of the paste (in square yards per gallon). Where the linoleum is to be installed over lining felt, divide the square yardage of the room by *half* the spreading capacity of the paste.

4. The linoleum should not be estimated on the square yardage of the area, but upon a calculation of the number of six-foot strips necessary. This is because linoleum is made six feet wide only, and because it is desirable to have as few seams in the finished job as possible.

For example, if an estimate were based on the square yardage of a 10′ x 20′ room, approximately 22¼ square yards would be figured. This would be inaccurate. Actually, two pieces 6′0″ wide by 20′3″ long, amounting to approximately 27 square yards, should be estimated.

5. Estimate the job so that there will be as few seams as possible, and so that the seams will run the long way of the room. However, it is always better for the seams to run across the floor boards.

6. Estimate the length of each piece of linoleum to the nearest full repeat in design over the length of the room. The last piece, however, should be cut to exact length, allowing 3″ for trimming and fitting at walls.

For example, let us assume that we are estimating materials for a room measuring 15′3″ long by 11′ wide, in which linoleum having an 18″ repeat design is to be installed. The first 6′ strip should be cut 16′6″ long. The second should be cut 15′6″ long. This will enable the mechanic to get a perfect pattern match and a perfect fit at the wall lines when the material is installed.

7. Cross-seams are conspicuous and unsightly. They should be avoided wherever possible. This is particularly true when Jaspés, Marbelles, and Monobelles are being installed.

However, if a patterned linoleum is being estimated and a cross-seam cannot be avoided, be sure to allow extra material for matching. Add slightly more than half the length of the repeat of the design to each piece of linoleum that is to be cross-seamed. This gives a little more than the full repeat between the two halves after the piece has been cut, plus from 1″ to 3″ of material at the far ends for fitting at the wall lines.

8. No allowance for matching or cross-seams need be made when estimating Plains, Marbelles, Monobelles, and Jaspés. Simply add 3″ to the required length of each piece to allow for fitting the goods at wall lines.

9. After the finished border width has been selected, add at least 1″ to this width for fitting, trimming, and wall variations. A wider strip of border material is needed for walls with doors.

10. The lineal footage of border material is figured by taking the perimeter of the room and adding an additional 3″ for each side, to allow an overlap for cutting and mitering.

11. At each outside corner, add the width of the border to the length of each of the two strips that meet to form the outside corner. This allows material for mitering.

12. To figure the lineal footage of Linostrips for a given area, begin with the perimeter of the room and deduct *one* width of the border for each side. This includes allowance for mitering.

The following example of estimating the various rooms of a typical house, Fig. 231, illustrates most of these principles.

Living-room

The field of this room, Fig. 231, will require two 6′0″ wide pieces of linoleum. This allows a 9″ wide border on the north and south sides.

To determine the exact length of these pieces, divide the length of the repeat (in this case 18″)

into the length of the room (21′). By so doing, it is found that a piece equivalent to 13 full repeats (19′6″) will allow a 9″ border at the east and west ends of the room. Therefore, two pieces 6′0″ by 19′6″ are required for the field.

In figuring the border material, it is found that the north, south, and west walls of the living-room have doorways. For these doorways, allow an additional 3″ in the width of the border material, and order a strip 12″ wide. The total length of 12″ border strip to order for the north, west, and south walls will be 21′ (plus 3″ for waste in mitering) plus 21′ (plus 3″ for waste) plus 13′6″ (plus 3″ for waste) = 56′3″. For simplicity, order 57 lineal feet 12″ wide.

For the east end of the room, order 9″ wide border material. There are no doorways, and the variation caused by uneven walls can be taken up in the 3″ allowed for the other end of the room.

The entire length of the section to be covered with a 9″ border is the distance from *A* to *B* (4′3″) to *C* (2′) to *D* (5′) to *E* (2′) to *F* (4′3″), or 17′6″.

To this 17′6″, add 9″ on *BC*, 9″ on each end of piece *CD*, and 9″ on *DE* — or a total of 3′0″. Also add 3″ to each of the five pieces (*AB*, *BC*, *CD*, *DE*, and *EF*) to provide for waste in cutting and scribing. Adding this total (1′3″) to the 3′0″ and the 17′6″ makes a grand total of 21′9″ (or 22′0″) of 9″ wide border material for the east end.

Dining-room

Following the same procedure as outlined for the living-room, the pattern (with an 18″ repeat) will fit into the room if two pieces 6′0″ wide by 12′0″ long are installed for the field. This will allow a 9″ wide border on the north and south sides, and a 7½″ wide border on the east and west.

Since the south and the east walls each contain a doorway, figure 12″ wide material for these two sides. For the north and the west walls, 9″ wide material may be used.

The lineal footage of border material—figured in the same manner as for the living-room—is 28 feet of 9″ wide material and 28 feet of 12″ wide material.

Bedroom

Since Jaspé is an allover pattern, and since this room is practically square, the direction of traffic in the room should decide the direction in which the linoleum is to run. Here, the traffic will be from the door in the west wall toward the window in the east wall. Therefore, the graining of the Jaspé should run east and west.

Two pieces 6′0″ wide across the 13′6″ wall will allow 9″ on either side for the 1½″ Linostrip and the 7½″ border. A 7½″ border and a 1½″ Linostrip may also be used along the other walls if the two 6′0″ field pieces are cut approximately 11′9″ long.

Border material 9″ wide will allow sufficient waste for trimming and fitting the 7½″ border on the north, east, and south sides, which do not contain any doors. The lineal footage of 9″ border material to order for these three sides will be 13′6″ (plus 3″ for waste) plus 13′ (plus 3″ for waste) plus 13′ (plus 3″ for waste) or 40′3″. Therefore, order 41′ of 9″ material.

For the west side of the room, the border material must have an extra 6″ of width, so that it will be wide enough to fall back into the passage doorway, as well as into the closet doorway. (The closet doorway should be covered to the far side of the wall line.) Therefore, order border material 15″ wide. The length of this 15″ strip should be 13′6″ plus 3″ for waste or 13′9″. Therefore, order 14′ of 15″ material.

The lineal footage of Linostrip needed for this area is figured by finding the perimeter of the room (53 lineal feet) and subtracting four times the width of the 9″ border (3′0″). That is, 50 lineal feet of 1½″ Linostrip is required.

An additional piece of border material 3′0″ x 3′3″ must be figured for use in the closet.

Bathroom

A 6′0″ wide piece 7′0″ long will cover the main section of the floor. Fill in the corner between the closet and the tub with a piece of linoleum 2′9″ by 1′9″.

Rear Hall and Passage

Due to the small size of this area, a very narrow border is necessary. If a 6′0″ piece approximately 8′0″ long is used for the field of the hall and passage, the waste will include a piece large enough for the closet and pieces large enough to form the border for the three sides of the hall and the two sides of the passage facing the closet.

However, it will be necessary to figure additional border material for the remaining three sides of the passage. Following the procedure outlined for the living-room and dining-room, 15 lineal feet of 9″ wide plain border material will be sufficient.

To figure the Linostrip, find the perimeter of the hall and passage (approximately 32′) and subtract 3″ from each of the eight sides. The result is 30 lineal feet of Linostrip, ⅝″ wide.

Kitchen and Pantry

The kitchen requires two pieces 6′0″ wide by 16′6″ long, because 16′6″ is the first size above 16′0″ into which an 18″ repeat is evenly divisible. Pieces 16′6″ long will allow matching of the 18″ repeat.

A 2′0″ wide piece of waste at the sink, and waste from the space covered by the cabinet on the east wall, must be figured. This waste might be pieced in the pantry; but it is better to use a piece 6′0″ by 6′0″.

Passage and Closet

Figure one piece 6′0″ by 8′9″.

Sundries

The felt and paste for this entire house can be figured from the square yardage of each area.

CHAPTER TWENTY-FOUR

Armstrong's Laying School

To all linoleum mechanics employed by Armstrong merchants, the Armstrong Laying School offers—without charge—a complete course of personal instruction in the installation of linoleum and Linowall.

This school, founded in 1924, has trained thousands of successful linoleum mechanics. The cost of the instructions and of all tools and materials used during the course is borne by the Armstrong Cork Company. The only expense to the merchant is for transportation, room, and board while his mechanic is in Lancaster.

Two types of courses are offered under the direction of instructors who are not only expert mechanics themselves, but who have had years of experience in teaching. Both courses are thoroughly practical and include the making of actual installations. The school's prac-

Fig. 232—*The Armstrong Laying School, founded in 1924, occupies a section of this building. The school has trained thousands of successful linoleum mechanics. No tuition is charged. Standard and advanced courses are given in all types of work.*

tice rooms are designed to present all the laying problems that are encountered in actual work.

The Standard Training Course provides a thorough grounding in elementary linoleum laying, as well as an introduction to more advanced work. After mastering cutting, scribing, and fitting, under the close personal supervision of an instructor, the student advances to the use of special tools, such as Custom-Craft Dies, and to the installation of sink tops, cove and base, and Linowall. Where the student has had no previous experience in linoleum laying, arrangements can be made for an additional week of instruction.

For mechanics who already have had considerable experience, the school offers a Postgraduate Training Course. This covers much the same subject matter as the Standard Course, except that the elementary instruction is eliminated and emphasis placed on improvements in technique and new developments. The course is planned so that students can concentrate on special subjects and yet receive the full benefits of the course.

In both courses, the training methods are based on years of

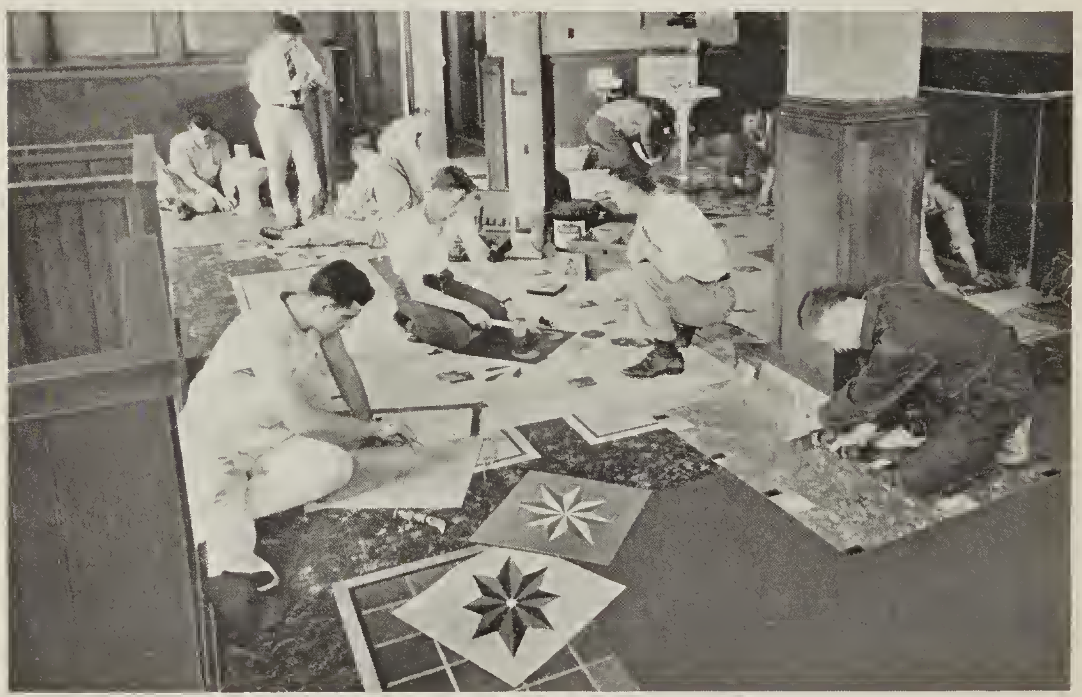


Fig. 233—*Armstrong's Laying School provides a complete, practical training. Students, doing actual work under expert instruction, learn the latest and best methods of installing linoleum and other floors, sink tops, cove and base, and Linowall.*

experience in this type of work. Each subject is approached with a classroom discussion. Current installation specifications, subfloor requirements, and preliminary steps are explained and demonstrated. Then, under the close supervision of an instructor, the student practices each operation. In addition, he is often sent out to see the installation of actual jobs.

Mechanics wishing to enroll in the school should have their employer make reservations for them well in advance of the time that they expect to attend. Due to the great number of students taking these courses, it is not always possible to arrange for training on short notice. Reservations are filled as received.

In addition to instruction in linoleum laying and the installation of Linowall, training is also given in the installation of Linotile (Oil-Bonded), cork tile, asphalt tile, rubber tile, and acoustical materials.

Mechanics or employers wishing more information about the school are invited to write to the Armstrong Laying School, Armstrong Cork Co., Lancaster, Pa.

SPECIFICATIONS

In addition to studying this book the mechanic should refer frequently to new editions of *Specifications for Installing Armstrong's Linoleum* as issued.

When improved methods of linoleum laying are developed, they are included in the current edition of the specification sheet. Therefore, to keep up-to-date in laying methods, make sure that you have the newest specification available at all times. Free copies will be supplied.

In addition to the linoleum specifications, Armstrong also offers the following literature of interest to the mechanic.

Specifications for Installing Armstrong's Floor Fill

Specifications for Installing Armstrong's Linowall

Specifications for Installing Armstrong's Mastic Armoflor

Specifications for Installing Armstrong's Asphalt Tile

Specifications for Installing Armstrong's Cork Tile

Specifications for Installing Armstrong's Linotile (Oil-Bonded)

Specifications for Installing Armstrong-Stedman Rubber Tile

Specifications for Installing Armstrong's Flash Type Cove and Base

Specifications for Installing Armstrong's Felt-Cushion Mastic Tile

Specifications for Installing Armstrong's Industrial Asphalt Tile

How to Install Armstrong's Linowall

The Care of Armstrong's Floors

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